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Management and Limits of The State Debt

MARYLAND STATE PLANNING COMMISSION

JUNE ◇ 1953

MANAGEMENT AND LIMITS
OF
THE STATE DEBT

MARYLAND STATE PLANNING COMMISSION

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June 15, 1953

TO HIS EXCELLENCY
THEODORE R. McKELDIN
GOVERNOR OF MARYLAND

Dear Governor McKeldin:

I am very pleased to transmit a study prepared and recently completed by the staff of the Commission entitled "Management and Limits of the State Debt."

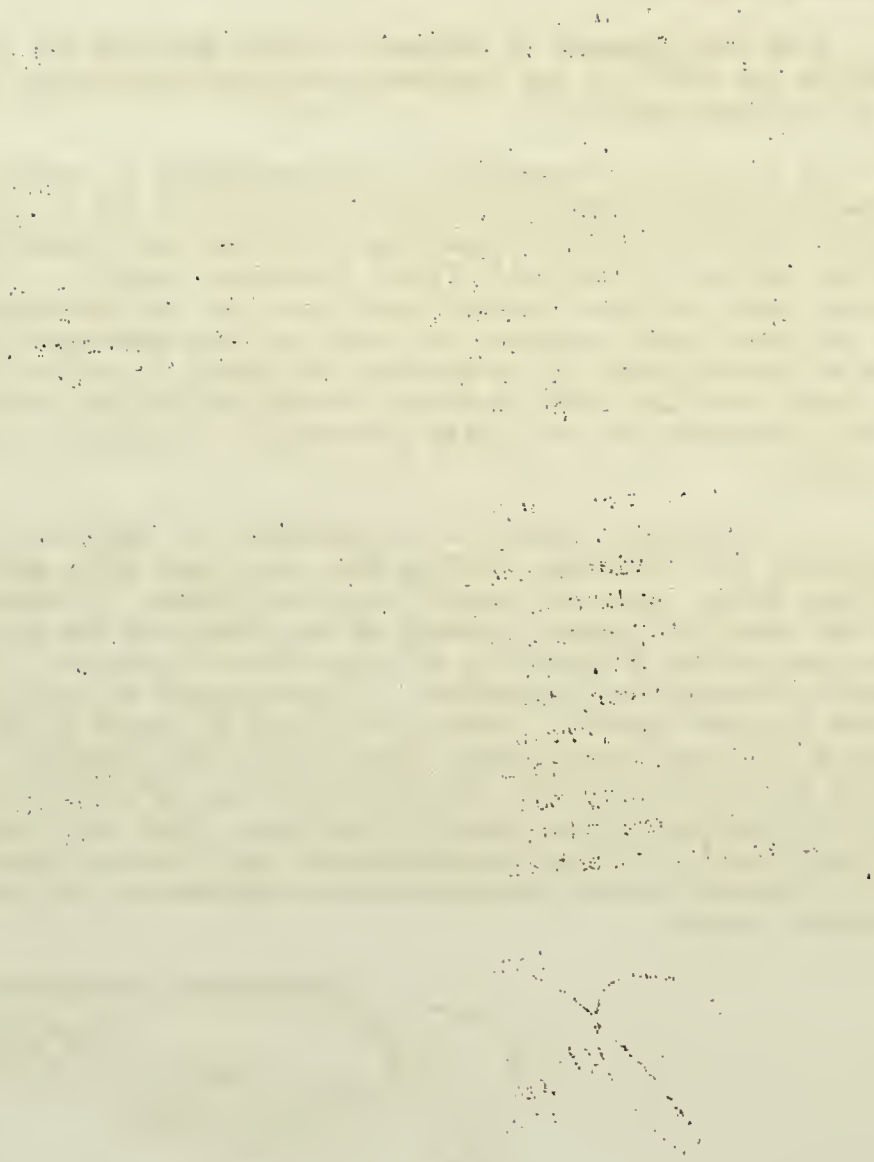
In view of the Commission's responsibility to review annually the long-term capital improvement needs of the State and to submit its recommendations to the Budget Director, this study was undertaken to determine the status of Maryland's fiscal borrowing capacity. Because of the growing level of debt, answers were sought to the question as to whether the State could continue to borrow on such excellent terms as it has done in recent years, if it persists in piling up debt at the present pace. Inquiry was also made regarding safety margins for expanding the State debt, according to the limits prescribed by various canons of sound fiscal policy.

On the basis of these two independent but corollary lines of investigation, the Commission advises that the State debt, despite its present high level, does not provide cause for alarm. It threatens neither the excellent credit standing of the State nor the risk of an excessive deflection of dwindling revenues to debt service in the event of economic recession or depression. In the absence of additional sources of revenue for debt service, however, the rate of growth of the State debt established in recent years cannot persist into the indefinite future without either affecting adversely the State's credit or alternatively causing a burdensome increase in the property tax rate. This fact lends support to the Commission's previous recommendation that serious consideration be given to placing capital improvement expenditures on at least a partial pay-as-you-go basis.

Respectfully submitted,

James C. Alban

James C. Alban
Chairman



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Alex. Brown and Sons

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First National Bank of Baltimore

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Board of Public Works, and Chief Deputy Comptroller,
State of Maryland

The Commission wishes to express its full appreciation to Mr. Albert R. Miller, Jr., who carried out the original research and analysis, conducted the series of interviews, and documented his findings in this report, with the advice of Mr. I. Alvin Pasarew, Director, and Mrs. Shirley F. Weiss, Staff Economist. A special word of thanks is also due Professor Fritz Machlup, of the Department of Political Economy, The Johns Hopkins University, and Dr. Gerhard Colm, Chief Economist, National Planning Association, who reviewed the project in its early stages and provided technical advice in the development of the investigation; and to Mr. David M. Ellinwood, Manager, Municipal Department, Moody's Investor Service, who contributed expert opinion on the criteria employed in assigned ratings to state bonds.

TABLE OF CONTENTS

PAGE

CHAPTER I. CONSTITUTIONAL PROVISIONS GOVERNING BORROWING BY THE STATES 1

Grouping of the States According to the Location of Borrowing Power 1
Differences in Borrowing Procedures 3
Constitutional Provisions Relating to Debt Management 4
The Constitution of the State of Maryland and Debt Management 6
Effectiveness of Constitutional Limitations Upon State Borrowing 6

CHAPTER II. DEBT MANAGEMENT AND THE RATE OF INTEREST . . . 10

Moody's Ratings of State Issues 11
Attempts to Measure Fiscal Capacity and Debt Burden 14
The Concept of Fiscal Capacity 16
Trull's Measurements 18
Ratchford's Measurements 20
Limitations of Measurements 22
Other Factors Influencing the Cost of Borrowing 23
Types of Bond 24
Mechanics of Issue 24
Constitutional and Legal Factors 26

CHAPTER III. MANAGEMENT OF THE STATE OF MARYLAND DEBT . . . 27

Constitutional Provisions Governing State Borrowing. . . 30
Type of Bond and Mechanics of Issue 31
Indices of Fiscal Capacity and Debt Burden 32
The Annuity Bond Fund Account 32

CHAPTER IV. PRESCRIBED FORMULAS FOR ASSIGNING LIMITS TO THE STATE DEBT. 36

Ratio of Debt to the Assessed Valuation of Property. . . 36
Ratio of Debt Service to Revenue 39
Ratio of Debt to Revenue 41
Criticism of the Hansen-Perloff and Ratchford Formulas 42
Application of Prescribed Formulas to Maryland State Debt 44

SUMMARY AND CONCLUSIONS 46

BIBLIOGRAPHY 49

APPENDICES 50

LIST OF TABLES

PAGE

1. Location of the "Effective" Borrowing Power of the States 1

2. Results of Four Tests of the Efficacy of Constitutional Provisions Limiting Borrowing by the States 7

3. States Ranked According to Ratio of Per Capita Net Long-Term Debt to Per Capita Income Payments and Per Cent Change in Net Long-Term Debt Between 1948 and 1952 . . 9

4. Dispersion of States Ranked According to Ratio of Per Capita Net Long-Term Debt to Per Capita Income Payments and Per Cent Change in Net Long-Term Debt Between 1948 and 1952 9

5. Total Interest Cost on Hypothetical $20,000,000 Loan . . 10

6. Economic Series Used by Edna Trull in Constructing Indices of Relative Fiscal Capacity 19

7. Economic Series Used by Ratchford in Constructing Indices of Relative Fiscal Capacity 21

8. Maryland State Bonds Outstanding, 1947-1953 27

9. Sale of Maryland State Bonds, 1947-1953 29

10. The Maryland State Debt and the Assessed Valuation of Property, 1947-1953 33

11. Loan Tax in Relation to Debt Service Requirements, State of Maryland, 1947-1952 34

12. Economic Model Showing Effect of $22,000,000 Annual Rate of Borrowing on Property Tax Rate 35

13. Debt Ratios for Two Hundred Largest Cities, 1940 39

14. Maryland State Debt Limits and Margins, as of Fiscal Year Ending June 30, 1953 45

APPENDICES

Table I. Provisions of State Constitutions Limiting State Borrowing 50

Table II. States Ranked According to Ratio of Per Capita Net Long-Term Debt to Per Capita Income Payments . . 54

APPENDICES (Continued)

PAGE

Table III. States Ranked According to Per Cent Change in Net Long-Term Debt, 1948-1952 56

Table IV. Annuity Bond Fund Account, State of Maryland, 1947-1952 57

Exhibit A. Example of Bill Showing How Property Tax Rate for a Future Calendar Year Is Fixed 58

Exhibit B. Letter, dated January 12, 1953, from Mr. David M. Ellinwood, Manager, Municipal Department, Moody's Investors Service 59

Exhibit C. Municipal Brief, John C. Legg and Company, Bankers, Baltimore, Maryland 61

CHAPTER I

CONSTITUTIONAL PROVISIONS GOVERNING BORROWING BY THE STATES

Grouping of the States According to the Location of Borrowing Power

A both convenient and useful device for analyzing the constitutional provisions of state governments with respect to the creation of debt is to group the states according to the location of their "effective" borrowing power.[1] As shown in Table 1 below, the states may accordingly be divided into three broad groups.

TABLE 1

LOCATION OF THE "EFFECTIVE" BORROWING POWER OF THE STATES [2]

In The Electorate		In the Legislature
I By Constitutional Amendment	II By Referendum	III Without Quantitative Limit
Alabama	Arkansas	(Arkansas before 1934)
Arizona	California	Connecticut
Colorado	Idaho	Delaware
Florida	Illinois	Maryland
Georgia	Iowa	Massachusetts
Indiana	Kansas	Mississippi
Louisiana	Kentucky	New Hampshire
Maine	Montana	South Carolina
Michigan	New Jersey	Tennessee
Minnesota	New Mexico	Vermont
Missouri	New York	With Remote Quantitative Limit
Nebraska	North Carolina	
Ohio	(since 1936)	Nevada
Oregon	Oklahoma	(North Carolina before 1936)
Pennsylvania	Rhode Island	North Dakota
Texas	Virginia	South Dakota
West Virginia	Washington	Utah
Wisconsin	Wyoming	

1/ Professor B. U. Ratchford, American State Debts, Duke University Press, Durham, North Carolina, 1941, p. 429 ff.

2/ Ibid., p. 433.

The borrowing power of those comprising Group I resides in the electorate and programs requiring borrowed sums can be secured only by means of constitutional amendment. Although the essential formality of this procedure would seem to operate as a brake upon borrowing, some states with the "amending habit" have increased their debts very considerably.1/

The constitutions of those states which make up Group II, on the other hand, require that each law authorizing borrowing on the part of the state shall first be submitted to a popular referendum. Thus, as in the case of the Group I states, borrowing power ultimately resides in the electorate, although the procedure is by no means as formal.2/

Group III comprises the remaining states whose legislatures may borrow without restrictions imposed by the electorate. This permissive authority in the hands of the legislatures evolves from one of two possible circumstances. Either the constitution may not have touched upon the subject of debt, in which case the power to borrow is presumed by the legislature in accordance with the frequently asserted constitutional principle that the legislature enjoys all lawmaking authority not explicitly denied by the constitution, or the constitutional limitations imposed upon the legislature may have been of such a general nature that effective borrowing power may still be considered to reside in that body.3/

1/ Ibid., p. 429; p. 432.

2/ Ibid., p. 432. Authorization of loans by referenda has been criticized on the grounds that authorizations are more than likely to be approved because most voters do not feel a direct responsibility for the subsequent payment of taxes required to service public debt. See Alfred G. Buehler, Public Finance, New York, 1940, p. 794.

3/ Ibid., p. 429; p. 432.

Differences in Borrowing Procedures

As between the different states that fall within Group I, where borrowing is by constitutional amendment, the procedure followed in securing borrowed sums is by no means uniform. As a rule, the legislatures are required to approve the proposed amendment authorizing borrowing by a two-thirds vote before it is submitted to the electorate.[1] In some states, such an amendment requires acceptance at two consecutive sessions of the legislature. The constitution of Pennsylvania, in addition to both the foregoing requirements, further provides that the amendment procedure may not be carried out more than once every five years.

Among the Group II states where borrowing is authorized by referendum, the vote in some states must be at a general election, while in others special elections are permitted.[2] Generally, a simple majority is sufficient to secure an authorization to borrow, but in several states a majority voting for governor or members of the legislature is prerequisite.

An unusual situation which arose in the State of Maryland a few years following World War I is worth noting in regard to the location of effective borrowing power. The legislature of Maryland in 1922 desired a clear-cut mandate from the electorate before paying a bonus to World War Veterans. Accordingly, it passed a law authorizing a $9,000,000 bond issue which was to become effective only after being authorized by popular vote. Prior to the time of election, however, this procedure was challenged, and the Supreme Court ruled the act unconstitutional on two separate grounds: First, the lawmaking authority delegated by the people to the legislature could not in turn be redelegated back to the people. Secondly, the legislature was not empowered to prescribe procedure for the enactment of laws different from that already prescribed by the people.[2]

1/ Ibid., pp. 434-35.

2/ Ibid., pp. 435-36.

It should be noted in regard to Group I and Group II states that legal debt limits are sometimes imposed upon the legislatures which can be breached only by means of constitutional amendment or referendum. These limits may be expressed in absolute dollar terms, as in the case of Kansas, or they may be expressed in terms of some prescribed formula, i.e., maximum ratio of debt to the assessed value of property, as in the case of Nevada. In one state, Virginia, where there is no permissive limit at all insofar as the legislature is concerned, the electorate can by referendum create debt only up to a given per cent of the value of taxable real estate. And in Wyoming, where the legislature is limited by the amount of tax revenues of the current year, the electorate, too, is limited by a prescribed maximum debt-to-valuation ratio.

Constitutional Provisions Relating to Debt Management[1/]

In addition to indicating the procedures to be followed in the ratification of legal debt limits, some state constitutions contain provisions regulating the payment of interest and principal on borrowed sums, the maximum length of maturities, and other phases of debt management.

Many states require that the authorization of new loans must be accompanied by provision for the payment of interest or for the payment of principal or both. With a significant decrease in the use of the property tax by the states, however, the feasibility of a specific levy for debt service is greatly restricted.[2/] Similarly, many state constitutions

---

1/ See also Table I of the Appendix.

2/ While the property tax rate may be arrived at simply by totaling the several rates in relation to outstanding loan authorizations, the same procedure could hardly be used in the levying of income, excise or other forms of taxes. B. U. Ratchford, op. cit., p. 436.

specify the maximum length of loans.[1] The legal maximums range from fifteen years, as in the case of Maryland, to seventy-five years, as in the case of California.

Despite the limitations imposed upon many of the states with regard to the creation of debt, the constitutions of all such states inevitably contain emergency provisions covering casual deficits, refunding and war. Permissive borrowing to meet casual deficits is, of course, desirable, for a state government would be greatly handicapped during a period of crisis if it could not secure borrowed sums to cover urgently needed current expenditures without resort to constitutional amendment or referendum. Unfortunately, however, a maximum limit set many decades ago is placed upon the amounts that some of the states might borrow for such purpose, which in terms of present-day budgets are wholly inadequate.[2]

Emergency provisions permitting the refunding of debts similarly are desirable insofar as they permit a state to dislocate itself from a possibly embarrassing fiscal situation or to take advantage of a substantial reduction in the rate of interest. The danger, however, lies in the possible encouragement that emergency refunding privileges may lead to the promiscuous lengthening of debt. Certain problems are connected also with emergency provisions relating to defense, particularly the discretionary authority given to governors in the disposition of borrowed sums.[3]

1/ In the case of such provisions, however, the danger is ever present that the legal maximum length of maturities shall become the customary term for repayment of loans. The constitution of the State of West Virginia is unique in that it establishes a minimum debt limit of twenty years. Ibid., pp. 436-37.

2/ Professor Ratchford here suggests that the limit should alternatively be stated as a percentage of revenue. Ibid., p. 437.

3/ Ibid., pp. 437-38.

The Constitution of the State of Maryland and Debt Management

Although the General Assembly of the State of Maryland may borrow without quantitative limit, certain other restrictions limiting the length of maturities and requiring a specific levy for the purpose of debt service are contained in Article III, Section 34, of the Constitution:

> No debt shall be hereafter contracted by the General Assembly unless such debt shall be authorized by a law providing for the collection of an annual tax or taxes sufficient to pay the interest on such debt as it falls due, and also to discharge the principal thereof within fifteen years from the time of contracting the same; and the taxes laid for this purpose shall not be repealed or applied to any other object until the said debt and interest thereon shall be repealed....

Since Maryland still retains the property tax, the levying of a specific tax in relation to debt service requirements arising from outstanding and newly authorized bond issues is readily calculable. (See Exhibit A of the Appendix.)

Whatever else may be said regarding the implications of the constitutional provision governing debt management for the flexibility of fiscal policy and operations, its restrictive content has, as we shall see later on, had a salutary effect upon the credit of the State and bond quality.

Effectiveness of Constitutional Limitations Upon State Borrowing

Since the principal purpose of the various constitutional provisions is to hold in check the amount of borrowing undertaken by the state, the really significant question at issue is whether or not such provisions have in fact operated toward this end. The threefold grouping of states is especially useful in this connection, since the difficulty in securing the authorization of loans constitutes the most formidable barrier to the creation of debt, and the Group I states, on the one extreme, are hampered by the formality and delay of constitutional amendment, while the legislatures

of the Group III states, at the other extreme, are perfectly free to borrow without electoral encumbrances.

Four basic tests of the efficacy of constitutional limitations upon borrowing were applied to each of the groups of states. They are as follows:

(1) the size of debt considered independently of any other factor

(2) the size of debt considered in relation to the size of the population

(3) the size of debt considered in relation to income[1/]

(4) the rate of growth of debt between 1948 and 1952[2/]

TABLE 2

RESULTS OF FOUR TESTS OF THE EFFICACY OF CONSTITUTIONAL PROVISIONS LIMITING BORROWING BY THE STATES

		Group I	Group II	Group III
Test (1)	Average Net Long-Term Debt, 1952	$128,200,000	$134,100,000	$79,900,000
Test (2)	Average Per Capita Net Long-Term Debt, 1952	$ 30.32	$ 30.62	$ 50.64
Test (3)	Average Ratio Per Capita Net Long-Term Debt (1952) to Per Capita Income Payment, 1951	2.2%	2.4%	3.2%
Test (4)	Average Per Cent Increase Net Long-Term Debt, 1948 to 1952	447.9%	423.0%	164.8%

As shown in Table 2, the results are not precisely in accordance with expectations, for in tests (1) and (4) the Group III states yielded the

1/ See Table II of the Appendix.

2/ See Table III of the Appendix.

lowest scores. Test (1), however, is of little significance, for the states comprising Group III are relatively small in population; correction for this factor is amply reflected in Test (2), where the results do conform with expectations. The results of Test (4) can, in the other hand, be accepted without qualification, and it appears as though the states hampered by electoral encumbrances increased their debts over the period, 1948-1952, more than two and one-half times as rapidly as those states free to borrow without constitutional restriction. Considered in relation to fiscal capacity as measured by income payments, the present level of debt of the Group III states does not show up in the same favorable light, as indicated by the results of Test (3).

The results of Test (3) and Test (4) may be explored still further with a view to their analytical content. Table 3 shows the states by groups ranked in accordance with (a) the ratio of per capita debt to per capita income, and (b) per cent change in debt between 1948 and 1952. Table 4 shows the dispersion of these two forms of rank by group. Thus with respect to Test (3), the favorable results yielded by the Group I states were due to the fact that a vast majority (61.0 per cent) of the states in this group enjoyed low rankings, rather than the downward pressure upon the score exerted by a few states within this group possessing extraordinarily low ratios of per capita debt to per capita income. Essentially the same may be said of the results of Test (4). The Group III states revealed top honors, not because just a few states within the group greatly reduced their debts or increased them very slightly, but rather because a majority of the states (53.8 per cent) possessed low rankings in the ordering of states according to the rate of debt increase over the period under consideration.

TABLE 3

STATES RANKED ACCORDING TO RATIO OF PER CAPITA NET LONG-TERM DEBT TO PER CAPITA INCOME PAYMENTS AND PER CENT CHANGE IN NET LONG-TERM DEBT BETWEEN 1948 AND 1952

State	Group I Rank[1]	Group I Rank[2]	State	Group II Rank[1]	Group II Rank[2]	State	Group III Rank[1]	Group III Rank[2]
Ala.	25	33	Ark.	3	39	Conn.	23	34
Ariz.	41	38	Cal.	29	17	Del.	1	6
Col.	35	41	Idaho	44	12	Md.	11	11
Fla.	26	1	Ill.	24	43	Mass.	8	21
Ga.	38	10	Iowa	33	4	Miss.	10	40
Ind.	43	32	Kan.	45	45	N. H.	22	29
La.	4	30	Ky.	39	27	S. C.	5	25
Me.	21	23	Mont.	12	18	Tenn.	19	28
Mich.	17	26	N. J.	13	15	Vt.	31	24
Minn.	20	20	N. M.	18	37	Nev.	42	19
Mo.	40	48	N. Y.	27	44	N. D.	28	46
Neb.	48	42	N. C.	6	7	S. D.	37	47
Ohio	30	3	Okla.	9	2	Utah	46	22
Oreg.	15	5	R. I.	14	31			
Pa.	7	9	Va.	36	13			
Tex.	34	14	Wash.	16	8			
W. Va.	2	16	Wyo.	32	35			
Wisc.	47	36						
Average Rank	27.4	23.7		23.5	23.4		21.8	27.1

TABLE 4

DISPERSION OF STATES RANKED ACCORDING TO RATIO OF PER CAPITA NET LONG-TERM DEBT TO PER CAPITA INCOME PAYMENTS AND PER CENT CHANGE IN NET LONG-TERM DEBT BETWEEN 1948 AND 1952

	Per Cent States in Each Quadrant[1]				Per Cent States in Each Quadrant[2]			
Group	Rank 1-12	Rank 13-24	Rank 25-36	Rank 37-48	Rank 1-12	Rank 13-24	Rank 25-36	Rank 37-48
I	16.67	22.22	27.77	33.33	27.77	22.22	27.77	22.22
II	23.53	29.41	29.41	17.64	29.41	23.53	17.65	29.41
III	38.46	23.08	15.38	23.08	15.38	30.77	30.77	23.07

1/ Rank according to ratio of per capita net long-term debt (1952) to per capita income payment (1951).

2/ Rank according to per cent change in net long-term debt between 1948 and 1952.

CHAPTER II

DEBT MANAGEMENT AND THE RATE OF INTEREST

One of the most frequently asserted dicta in the field of public finance is to the effect that borrowing does not provide a real alternative to taxation, for debts incurred by federal, state or local governments must eventually be repaid, plus interest, out of future tax revenues. Similarly, it has oftentimes been observed that a capital asset purchased out of borrowed sums costs the taxpayer less whenever the interest charge is lower and the length of the loan is shorter.

The effect of differences in the rates of interest and maturities upon the interest burden that must be borne by taxpayers incident to a hypothetical $20,000,000 loan is shown in Table 5.

TABLE 5

TOTAL INTEREST COST ON HYPOTHETICAL $20,000,000 LOAN

Year	Unpaid Balance	Interest on Unpaid Balance 2%	2.5%	3%
	10-Year Amortization			
1	$20,000,000	$400,000	$500,000	$600,000
2	18,000,000	360,000	450,000	540,000
3	16,000,000	320,000	400,000	480,000
4	14,000,000	280,000	350,000	420,000
5	12,000,000	240,000	300,000	360,000
6	10,000,000	200,000	250,000	300,000
7	8,000,000	160,000	200,000	240,000
8	6,000,000	120,000	150,000	180,000
9	4,000,000	80,000	100,000	120,000
10	2,000,000	40,000	50,000	60,000
	Total Interest	$2,200,000	$2,750,000	$3,300,000
	5-Year Amortization			
1	$20,000,000	$400,000	$500,000	$600,000
2	16,000,000	320,000	400,000	480,000
3	12,000,000	240,000	300,000	360,000
4	8,000,000	160,000	200,000	240,000
5	4,000,000	80,000	100,000	120,000
	Total Interest	$1,200,000	$1,500,000	$1,800,000

Clearly, a difference between 3% and 2% in the interest rate involved a very considerable saving in interest cost to the taxpayer, which in the case of the ten-year loan amounted to $1,100,000, or slightly more than five per cent of the original borrowed sum. By far the greatest saving to the taxpayer resulted from the difference between the ten-year loan at 3%, on the one hand, and the five-year loan at 2%, on the other, which amounted to $2,100,000, or slightly more than ten per cent of the original borrowed sum.

So far as the determination of the interest rate which state governments must pay in order to attract loanable funds is concerned, this is largely a matter of prevailing capital market conditions. Given the general market situation, however, there still remains a small but important margin of control over the dollars paid on borrowed sums that state authorities, legislatures, as indeed also electorates, may exercise with a view to minimizing the cost of borrowing. A keen awareness of this kind of residual control over the interest rate is of particular importance during a period of high and continuously rising prices of the goods and services that state governments are compelled to buy in the course of carrying out their growing responsibilities.

In this chapter, therefore, we are not concerned with the broader issues of debt management (i.e., countercyclical fiscal policy, deficit-financing vs. pay-as-you-go financing, timing of debt-financed programs to take advantage of a temporary reduction in the interest rate), but rather with the somewhat narrower problem of debt management in its relationship to the cost of borrowing.

Moody's Ratings of State Issues

Among the proximate and possibly controllable factors influencing

the cost of borrowing, perhaps none is of greater importance than the ratings assigned to state obligations by Moody's. Indeed, banking syndicates, as also the investing public, seldom bid on new issues without first consulting the published reports of this renowned financial service, and whether or not a state's obligations are "AAA" or "AA" rated will affect perceptibly the cost of borrowing. It is important, therefore, that all those bearing a responsibility in any way to the fiscal affairs of the State should be apprised of the principal criteria used by Moody's in the determination of bond quality, remembering that Moody's ratings, in the last analysis, are based on the quality of the statistics furnished.

In the absence of published information, a direct inquiry was addressed to Moody's Investors Service, and a prompt and informative reply was received from Mr. David M. Ellinwood, Manager of the Municipal Department. The salient points of Mr. Ellinwood's discussion of bond quality may be summarized briefly as follows:[1/]

1. Moody's ratings are in no way the product of scientific standards of measurement, but represent rather the "composite opinion" of trained and experienced staff analysts.

2. In appraising the credit of a state, the most important factor considered is the general fund, the present and prospective demands imposed upon it in relation to its resources. Demand is analyzed both in terms of fixed debt service requirements and other irreducible expenditures, such as aid to the indigent and assistance to local governments. The resources of the general fund, on the other hand, are identified broadly with the fiscal capacity of the state, particularly its present tax structure and the estimated expandability of its taxing authority. What Moody's is concerned about, in the final analysis, is the probable degree of stability of tax yields under prospective business conditions forecast by their own economists.

1/ For the full text of Mr. Ellinwood's letter, see Exhibit B of the Appendix.

3. Where debts are serviced by means of specifically earmarked taxes, analysis is then directed to "special" rather than general fund conditions. If found to be insecure, bond quality is based as before upon analysis of the general or "guarantor" fund.

4. The ratings of state issues may be revised downward for one or a combination of reasons. Some of those prompting recent changes were: (a) sudden shift on the part of a state away from conservative fiscal tradition and the piling up of debt without any specific provision for repayment; (b) the rapid accumulation of nongeneral debt on top of already excessive general debt; (c) permanent "embarrassment" of the general fund; (d) grant of permissive authority to state legislature to create unlimited debt without referendum where such authority did not previously exist.

As a matter of particular interest, the letter of inquiry also requested information as to why Moody's changed its rating of State of Maryland bonds from "AA" to "AAA" in 1941. This was due, Mr. Ellinwood said, to two major factors. First, review of the State in 1940 disclosed that Maryland had withstood the "trials" of the depression far better than formerly appreciated. Secondly, the lively prospect of continued economic prosperity supplanted the generally pervasive depression psychology that reappeared in the late thirties.

Besides the ratings of state issues, Moody's Governments and Municipals provides the investor with an abundance of supporting information for his guidance. Referring to the report on the State of Maryland general obligation bonds for the year 1952, the following fiscal and other relevant data are shown:

1. General Obligations

   (a) bonded indebtedness (excl. bonds of State Road Commission), fiscal year ending June 30, 1951

   (b) bonds authorized but not issued, June 30, 1951

   (c) schedule of bonded debt - issues outstanding

   (d) debt service requirements, 1952-61

(e) average annual debt service requirements, 1952-66

(f) outstanding revenue bonds

(g) rating of Maryland State bonds

2. Fiscal Information

(a) assessed valuation and tax rates, 1910-51

(b) tax collections, fiscal years ending June 30, 1951 and 1950 compared (also ratios of uncollected to total levies for the two years)

(c) receipts and disbursements itemized, 1945-51

(d) gross and net debt, 1900-35 (5-year intervals), 1945-51 (inclusive)

3. Principal Tax Sources

(a) each State tax and rate

(b) statement to the effect that the State and its political subdivisions are in no ways limited in the amount or rate of taxes which may be levied

4. Fiscal Capacity Information

(a) population data (totals, race composition, density)

(b) State income payments, 1945-50 inclusive (and for occasional earlier years)

(c) per capita income payments, comparison by states (shown in special section)

(d) Census of Manufactures data, from 1899 to 1947

(e) Census of Agriculture data, 1940 and 1945

(f) mining (value of mineral production and quantities of principal minerals produced)

(g) lumbering (board feet of lumber produced, 1945-49)

Attempts to Measure Fiscal Capacity and Debt Burden

The credit of a state depends in the final analysis upon the size of debt in relation to the fiscal capacity to service debt. Moody's ratings,

we have seen, are based upon purely qualitative judgments, without any attempt at all to convert the kind of fiscal and economic data which it provides to investors into formal indices of fiscal capacity and debt burden.

The debt-to-assessed-valuation ratio, which will be discussed at greater length in a subsequent chapter, is a commonly accepted measure of debt burden. This simple index oftentimes appears in explicit form, as in the case of "municipal briefs" circulated by investment banking firms in relation to a new issue of state or local obligations.[1/] There is the clear suggestion in the case of Moody's Governments and Municipals, where the concept is implicit, that the ratio should be regarded only in the light of a state's past record of assessments, tax rates, and performance in the collection of taxes. As a rule, bankers and analysts regard unfavorably reassessments designed to improve the fiscal picture of a state or local government prior to a new issue, unless long overdue, and where observable increases in population justify higher valuations. Public finance experts, on the other hand, are inclined to dismiss the debt-to-valuation ratio as an archaic measure of debt burden, whose validity, if it ever possessed any at all, was greatly impaired as the states more and more relinquished the property tax to local governments.

Pioneer attempts to construct formal indices of fiscal capacity were made in the late twenties and early thirties, principally in connection with comparative standards of education. Subsequent ones were made in the late thirties, this time in relation to the problem of apportioning federal grants-in-aid. With the notable exception of Edna Trull[2/] and

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1/ See Exhibit C of the Appendix.

2/ Resources of the Forty-Eight States, New York, 1937. The work of Edna Trull is of particular significance since it was sponsored by Dun and Bradstreet and reflects the interest of this renowned credit rating service in quantitative measurement.

Professor Ratchford[1] in the late thirties and early forties, respectively, implications of the quantitative measurement of fiscal capacity for the evaluation of debt and state credit gained very little attention. Before considering the means by which they undertook the quantitative measurement of fiscal capacity and debt burden, however, it shall first be necessary to discuss a few purely conceptual matters.

The Concept of Fiscal Capacity

Up to this point, the term fiscal capacity has been used without clarification of its meaning. For the purpose now at hand, however, it shall be necessary to arrive at an articulate (rather than intuitive) notion of what precisely the term is intended to convey. Accordingly, two fundamentally important distinctions must be made: (1) economic capacity vs. fiscal capacity; (2) absolute fiscal capacity vs. relative fiscal capacity.

Economic capacity is an all-embracing generic term having reference to the ability of the population of a state on the basis of its total complement of resources to produce goods and services both for private and public need. It includes, therefore, the ability to (a) produce goods and services for personal consumption; (b) generate savings necessary for net capital formation; (c) insure the support of state and local functions; (d) contribute to the support of the federal government. The first two, (a) and (b), might be designated "private economic capacity," the last two, (c) and (d), "public economic capacity," or just fiscal capacity. In a word, fiscal capacity represents the amount of income originating in the productive efforts of the population of a state that might be diverted to the support of federal, state and local governments.[2]

1/ Op. cit.

2/ Paul Studenski, Measurement of Variations in State Economic and Fiscal Capacity, Federal Security Agency, Social Security Board, Bureau of Research and Statistics, Washington, March, 1943, p. 3.

Absolute fiscal capacity relates to the proportion of income originating in the productive efforts of the residents of a state that might be diverted to the support of state and local functions without seriously affecting the private sector of the state economy or its ability to support functions of the federal government.[1] The absolute fiscal capacity of a state depends not only upon its income productivity, but also upon the efficiency of its taxing system in effecting the transfer of income from private individuals and businesses to the public authority with a minimum of friction.[2] Needless to say, the measurement of fiscal capacity in its absolute form is impossible but the concept is nonetheless useful.

Relative fiscal capacity, on the other hand, involves comparisons between the states with regard to the respective amounts of resources that may be taxed by state and local governments.[3] As such, the concept abstracts altogether from variations in the willingness of the residents of the different states to be taxed and variations in the revenue productivity of different tax structures. Relative fiscal capacity is, as a consequence, readily measurable, and can be expressed as the ratio of a national norm without measuring independently the absolute fiscal capacity of each of the states. As will presently be seen, this is the methodology employed both by Edna Trull and Professor Ratchford in reducing their coefficients of fiscal capacity to indices.

1/ Ibid., pp. 3-4.

2/ Ibid. By minimizing the social, political and economic frictions incident to the transfer of income, an efficient tax system is able to divert a larger proportion of income from private to public hands than an inefficient one. See also Lewis H. Kimmel, Taxes and Economic Incentives, Brookings Institution, Washington, D. C., 1950, p. 5 ff. for further discussion of this important point.

3/ Ibid., pp. 4-5. The concept may also refer to the comparative revenue productivity of the states based upon a hypothetical uniform tax structure. By revenue productivity is meant the amount of revenue that may be derived from a given complex and level of taxes.

Trull's Measurements

The work of Edna Trull commends itself to our attention principally because it represents a pioneer attempt to apply scientific standards and techniques of measurement to the analysis of state credit. It should be pointed out, however, that the estimates of fiscal, or debt-paying capacity which she evolved are purely comparative and do not suggest in any way the maximum limit to which each state might with safety borrow. They reflect rather the relative abilities of the states to raise revenues for the purpose of debt service.1/

In selecting factors deemed most significant for the purpose of measuring relative fiscal capacity, consideration was given not only to taxable-wealth-and-income measuring standards, but also to the types of state debts and the different sources of revenue allocable to repayment.2/ Accordingly, the seven economic series shown in Table 6 were selected, and a composite index of fiscal or debt-paying capacity was constructed, which briefly may be described as "the sum of the percentages of the median for each of the individual series, weighted in accordance with the importance of the components."3/

The indices of fiscal or debt-paying capacity are in turn used in the construction of indices of relative debt burden. It is important to observe in this connection that local debts are included along with the direct debts of each state principally on the grounds that they are serviced from the same total of taxable resources.4/ The inclusion of local debts

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1/ Trull, op. cit., p. 97.

2/ Ibid., p. 91.

3/ Ibid., p. 99.

4/ Ibid., p. 104.

TABLE 6

ECONOMIC SERIES USED BY EDNA TRULL IN CONSTRUCTING INDICES OF RELATIVE FISCAL CAPACITY[1]

Economic Series	Reason for Selection	Limitation
Per Cent of Population Making Federal Income Tax Returns (weight = 1)	Reflects comparative minimum financial well-being of residents of state and general level of wealth.	Understates economic level of agricultural states where proportion of income is nonmonetary.
Per Cent of Population Making Federal Income Tax Returns Over $5,000 (weight = 1)	Reflects debt-paying capacity due to larger than minimum taxable income. [2]	Ignores taxpaying potential due to heavy concentrations of wealth and larger taxable incomes.
Per Capita Retail Sales (weight = 4)	Measure of spending power, liquid resources and living standards of residents of state.	Ignores large amounts of home-produced goods in essentially rural states.
Per Capital Gasoline Consumption (weight = 1)	General usage of gasoline tax and high ratio of highway to total state debt.	Difficulties arising from use partly offset by inclusion of motor vehicle ownership.
Motor Vehicles Per 1,000 Population (weight = 1)	Combined with gasoline consumption, reliable gauge of level of wealth and direct potentialities for taxation.	Taken by itself, ignores mileage driven and use of highways by out-of-state drivers.
Assessed Valuation Property (weight = 3)	Most important tax source in state-local system despite fact that property tax has in most instances been relinquished to local governments.	Limitations don't vitiate its usefulness when used in combination with other measurement factors.
Per Capita Savings Deposits (weight = 1)	Represent liquid assets that may be called upon for meeting tax obligations.	Omission of deposits in banks outside states and building and loan association savings accounts.

1/ Ibid., pp. 91-5.

2/ Thus it is implied that an inequitable distribution of income enhances fiscal capacity. Trull's view in this connection is supported by Kimmel, op. cit., pp. 8-9. Studenski, on the other hand, regards an inequitable distribution of wealth as inimical both to general economic capacity and fiscal capacity (ibid., pp. 49-50).

in the estimates of debt burden is justified also on the grounds that they may indirectly intrude into state budgets on account of (a) the assumption of local debt by the state; (b) the allocation of state revenues to the servicing of local debt; (c) the trend in the direction of sharing state-collected taxes with local governments; (d) the assumption of local functions by state governments.1/ Indeed, no valid appraisal of a state's credit can be made, according to Trull, without considering local debt in combination with that for which the state is legally responsible. The indices of debt burden consist, therefore, in the ratios of the per capita state and local tax-supported debt2/ to the respective indices of fiscal or debt-paying capacity.3/ So far as their analytical content is concerned, the state and local debt-load ratios thus arrived at supply only the means of determining the relationship which each state bears to the national average, or median, and to every other state.4/

Ratchford's Measurements

While pursuing the same basic methodological approach, Professor Ratchford's measurements of fiscal capacity and debt burden differ from those of his predecessor in several respects. First, in the selection of economic series to be used in the construction of indices of fiscal capacity (see Table 7), consideration was given only to the various forms of income payments that the states might draw upon for their revenue,5/ whereas Trull

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1/ Ibid.

2/ The state and local tax-supported debt, or, "net tax-supported debt," is equivalent to the gross bonded debt of state and local governments less sinking funds and self-supporting debts. Accordingly, a state's credit is affected not alone by the size of its own direct debt but also the tax-supported debt of its local governments.

3/ Ibid., p. 106.

4/ Ibid., p. 108.

5/ Ratchford, op. cit., p. 529.

TABLE 7

ECONOMIC SERIES USED BY RATCHFORD
IN CONSTRUCTING INDICES OF
RELATIVE FISCAL CAPACITY 1/

Economic Series	Reason for Selection
Per Capita Income Payments 2/	Indicates size of principal sources of state revenues.
Per Capital Retail Sales 3/	Throws some light on income distribution and size of base for sales taxes.
Per Capita Taxable Wealth 3/	Justified on grounds that some states still levy property taxes and furnishes check on income figures.
Per Capita Output of Primary Industries 4/	Furnishes check on income statistics and indicates size of base for certain business or severance taxes.

1/ Ibid., pp. 529-30.

2/ The limitations associated with the use of this economic series are discussed at length by Studenski (op. cit. pp. 59-75).

3/ Used also by Edna Trull.

4/ Composed of cash farm income, value of mineral production and value added by manufacture. Ratchford has thus formalized some of the data shown in Moody's Governments and Municipals.

considered also the types of state debt and the principal tax sources. Secondly, Professor Ratchford's indices of fiscal capacity consist of unweighted arithmetic averages of the relatives for each of the four series, where the relatives indicate the position of the state in relation to the national average.1/ Each of Trull's economic series, on the other hand, is weighted in accordance with its presumed importance. Thirdly, instead of using the combined state and local tax-supported debt in the construction

1/ Ibid., pp. 529-30.

of indices of debt burden, Professor Ratchford includes only that portion of local government debt actually based upon state funds.[1] Finally, in constructing indices of debt burden, Ratchford first transforms the per capita "total net debt"[2] of each state into relatives by the same method used on the income-and-wealth series,[3] whereas Trull's indices of debt burden consisted simply in the ratios of per capita "net tax-supported" debt (without conversion into relatives) to the respective indices of fiscal capacity.

Limitations of Measurements

Measurements of relative fiscal capacity are not, of course, without their serious limitations, particularly those based upon a large number of economic series. In this connection two principal objections have been raised, namely, the inescapable overlapping of economic series and consequent overweighting of evidences of wealth and income peculiar to certain states and the arbitrary judgments that must be made both in the selection of economic series and their weighting.[4]

So far as the usefulness of indices of relative fiscal capacity in the evaluation of credit is concerned, there is the more fundamental problem of variations in the cyclical pattern of income and revenue among states possessing vastly different economic backgrounds. What actually seems to be required in the construction of such indices, therefore, are

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1/ Professor Ratchford thus uses alternatively "total net debt" which is equivalent to the gross direct debt of each state, minus sinking funds and debts owed to state trust funds, plus revenue and local government bonds based upon state funds.

2/ See footnote (1) above.

3/ Ibid., p. 532.

4/ Studenski, op. cit., pp. 28-9.

the expected revenue-producing potentialities of the states during periods of economic depression, for in the analysis of state credit the really significant question at issue is the ability of the states to meet their debt obligations out of depression levels of income and revenue.

Indices of fiscal capacity based upon the concept of revenue productivity did, in fact, make their appearance during the mid-thirities,1/ but they reflected the relative amounts of revenue that a "uniform" or "ideal" tax system would produce in each state. Given the complement of economic resources, the relative fiscal capacities of the states depend not only upon the efficiency of their respective tax systems, but also their willingness to tax themselves, and these two factors are interdependent. This is so because the willingness of a state to tax itself tends to be reflected in the efficiency of its tax system. Since the "uniform" tax system approach abstracts altogether from the element of willingness and its effect upon revenue feasabilities, it hardly lends itself to the analysis of state credit. To arrive at really useful indices of fiscal capacity, therefore, a subjective evaluation would have to be made of the permissive increases in tax rates and the imposition of new taxes that residents of the different states would bear in order to prevent default on outstanding obligations.

Other Factors Influencing the Cost of Borrowing

Besides Moody's ratings and qualitative judgments regarding the fiscal condition and capacity of a state government, other factors of a proximate character, too, may affect the cost of borrowing. The more

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1/ See Mabel Newcomer, An Index of the Taxpaying Ability of State and Local Governments, 1935, and Leslie L. Chism, The Economic Ability of the States to Finance Public Schools, 1936.

important among these are the type of bond, the method or mechanics of issue, constitutional provisions and other legal factors pertaining to the state debt.

Types of Bond. Very broadly, there are two types of bond that state and local governments may issue. The first of these, the term bond, requires that the entire amount of a loan be retired at a single specified future time. The second, the serial bond, involves, alternatively, the issuance of securities of different maturities in relation to a single loan authorization, and, as a consequence, each loan is retired over a multiple of specified future dates.

Both because of its advantages for debt management and preference on the part of investors, there has been a significant trend toward the use of the serial-type bond by state and local governments.1/ First, the serial-type bond obviates the difficulties attendant to the maintenance and investment of sinking funds. Secondly, the clearly specified amounts of serial retirements make it possible to plan service charges with a higher degree of accuracy and reduce the prospect of refunding. Thirdly, the cost of issue is in most instances cheaper. Finally, the serial-type bond is greatly favored by investors, principally because of the sinking fund problem inherently associated with term bonds and the possible deflection of the resources of such funds to other uses.2/

Mechanics of Issue. Insofar as the mere mechanics of issue are concerned, the salient considerations are the method of soliciting bids by

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1/ Paul Studenski, "Economics of Long and Short Term Loans," in Mark Carter Mills and George W. Starr, Readings in Public Finance and Taxation, New York, 1932, p. 756.

2/ Ibid. This view was confirmed in an interview with Mr. Charles S. Garland, Alex. Brown and Sons, January 16, 1953, regarding management of the Maryland State debt.

banking houses and sydicates, on the one hand, and the timing and spacing of issues, on the other.

The two methods of securing bids on new issues are (1) to solicit bids on offerings of bonds at par and a specifically designated rate of interest, plus a possible premium or minus a discount; (2) to solicit bids on the rate of interest alone. A distinct advantage may accrue to the borrowing authority through the use of the latter method (soliciting bids on the rate of interest only) because of the possibly wide discrepancy that may occur between the stipulated rate and the basic rate of a state's credit.1/ Where premium bidding is involved, purchasers do not as a rule figure their bids down interest-wise as low as in the case of bidding on the interest rate alone.2/ Aside from the savings in interest costs attendant to the use of bidding on the interest rate only, this method of solicitation is sometimes favored in banking quarters because it is felt that the state should not secure borrowed sums in excess of its planned requirements through premium bidding.3/

Because state treasuries as a rule enjoy permissive authority as to when and how much of a loan authorization shall be transformed into actual debt, a distinction must be made between the timing and the spacing of new issues. By the timing is meant the scheduling of the solicitation of bids in relation to the new issue of competing securities, private or public. If either concurrent with, or, too close to other offerings, the bidding on a new issue is not likely to be so brisk as otherwise. In the

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1/ Ibid., pp. 757-58.

2/ Ibid.

3/ Interview with Mr. E. Asbury Davis, United States Fidelity and Guaranty Company, January 7, 1953.

timing of new issues, consideration should be given, therefore, both for the past and future demands made upon common sources of loan capital, so that proper allowance may be made for the smooth market absorption of competing issues.1/

By spacing is meant, on the other hand, the scheduling of the solicitation for bids in relation to the same loan authorization over time. The primary consideration in this connection is that a given issue be so spaced with respect to time as to insure its own smooth market absorption. It might be remarked, too, that in a buyers' market an excessively large backlog of authorized but unissued bonds might possibly cause purchasers to "shade off" their bids.

Constitutional and Legal Factors. There are a number of constitutional and legal factors that, too, may affect the cost of borrowing. First, and without considering their broader implications for the flexibility of fiscal policy, constitutional provisions imposing strict limits on the length of maturities and requiring the levy of a specific tax for the purpose of debt service have a salutary effect upon bond quality and the interest rate. Secondly, the absence of limitations upon the amount or rate of taxes that may be levied by the state authority similarly has a favorable influence. Finally, legal limitations on the amount of state bonds that banks may hold affect the market for state issues and, consequently, the cost of borrowing.

1/ Interview with Mr. Garland.

CHAPTER III

MANAGEMENT OF THE STATE OF MARYLAND DEBT

One of the most significant developments in the Maryland fiscal scene during the years following the end of World War II has been the rapid growth of the State debt. It is estimated that by the end of the present fiscal year, June 30, 1953, the Maryland State debt shall have reached an all-time peak of $122,000,000, or, more than six times the level prevailing at the end of the fiscal year, June 30, 1947. The average annual increase in debt over the six-year period was $17,500,000.

TABLE 8

MARYLAND STATE BONDS OUTSTANDING
1947 - 1953

Year Ending June 30	Bonds Outstanding[1]	Absolute Increase from Previous Year	Per Cent Increase from Previous Year
1947	$ 16,900,000	---	---
1948	22,700,000	$ 5,800,000	33.3
1949	25,800,000	3,100,000	13.7
1950	32,800,000	7,000,000	27.1
1951	73,000,000	40,200,000	122.5
1952	91,500,000	18,500,000	25.3
1953	122,000,000[2]	30,500,000	33.3

1/ Comptroller of the Treasury of the State of Maryland, Annual Report.

2/ Estimated.

Nor does there appear to be any prospect for a retardation in the growth of the State debt, at least in the near future, as the amount of general obligation bonds authorized but unissued currently approximates $68,000,000, which figure includes the School Loan and General Construction Loan authorized by the 1953 General Assembly. Proceeds of the latter loan shall be used in financing the recommended (Group A) portion of the

Maryland State Planning Commission's Long-Term Capital Improvement Program Program.[1] Some part of the balance of the Commission's program, amounting to an additional $61,000,000,[2] shall very likely find its way into the State debt in subsequent years.

Despite the rapid growth of debt in recent years, the State of Maryland has maintained its "AAA" credit standing, and few states, other than one or two in the New England group, have been able to borrow at as low rates of interest. As shown in Table 9, there has been a perceptible inching upward since the fall of 1951 due to gradually changing capital market conditions, but the yield on new issues of State of Maryland general obligation bonds has not during the period under consideration exceeded 1.8%, the rate bid at the most recent sale.

In view of the present high level of debt, the really significant question at issue is whether or not the State of Maryland can continue to borrow on such excellent terms if it persists in piling up debt at the pace established in the past few years. Even among those who are closely conversant with the fiscal affairs of the State there is by no means a uniformity of opinion. On the one hand it is felt that the debt might be increased anywhere from $15,000,000 to $20,000,000 annually without affecting adversely the State's "AAA" credit rating and causing an increase in the cost of borrowing,[3] while, on the other, it is maintained that the State cannot go

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1/ Maryland State Planning Commission, State of Maryland 1953 Long-Term Capital Improvement Program, September 15, 1952, p. 129.

2/ Ibid.

3/ Interview with Mr. Garland. Borrowing in excess of $15,000,000 to $20,000,000 annually would, according to Mr. Garland, probably cause the State of Maryland to slip to an "AA" rating and thereby increase the cost of borrowing. While Mr. Davis did not venture an opinion as to how far he thought the debt might be increased, he found nothing at all in the present fiscal picture prejudicial to the State's excellent credit.

TABLE 9

SALE OF MARYLAND STATE BONDS
1947 - 1953

Legislative Authority	Date of Sale		Value of Bonds Sold		Yield
Yr. ending 6/30/47					
Ch. 747 (1945)	6/23/47		$ 2,313,000		1.16 %
Ch. 747 (1945)	6/23/47		2,312,000		1.16
Ch. 694 (1947)	6/23/47		5,000,000		1.16
		Total	$ 9,625,000	Wtd.Av.	1.16 %
Yr. ending 6/30/49					
Ch. 694 (1947)	12/30/48		$ 6,695,000		1.32 %
		Total	$ 6,695,000	Wtd.Av.	1.32 %
Yr. ending 6/30/50					
Ch. 502 (1949)	1/9/50		$ 1,500,000		1.216 %
Ch. 1 (1949)	1/9/50		7,890,000		1.216
Ch. 6 (1949)	1/9/50		350,000		1.216
Ch. 502 (1949)	5/31/50		7,308,000		1.403
Ch. 1 (1949)	5/31/50		12,319,000		1.403
Ch. 277 (1949)	5/31/50		5,373,000		1.403
		Total	$34,740,000	Wtd.Av.	1.355 %
Yr. ending 6/30/51					
Ch. 1 (1949)	2/13/51		$ 2,132,000		1.18 %
Ch. 4 (1948)	2/13/51		560,000		1.18
Ch. 277 (1949)	2/13/51		11,000,000		1.18
Ch. 109 (1949)	2/13/51		3,872,000		1.18
		Total	$17,564,000	Wtd.Av.	1.18 %
Yr. ending 6/30/52					
Ch. 1 (1949)	10/1/51		$ 4,472,000		1.481 %
Ch. 48 (1950)	10/1/51		2,800,000		1.481
Ch. 412 (1951)	10/1/51		3,000,000		1.481
Ch. 502 (1949)	5/13/52		6,248,000		1.414
Ch. 1 (1949)	5/13/52		4,784,000		1.414
		Total	$21,304,000	Wtd.Av.	1.446 %
Yr. ending 6/30/53					
Ch. 412 (1951)	10/8/52		$16,005,000		1.7155%
Ch. 413 (1951)	10/8/52		1,000,000		1.7155
Ch. 414 (1951)	10/8/52		1,500,000		1.7155
Ch. 1 (1949)	2/10/53		11,410,000		1.8000
Ch. 502 (1949)	2/10/53		4,165,000		1.8000
		Total	$34,080,000	Wtd.Av.	1.7541%

more heavily into debt without dire consequences.[1/]

The fact of the matter is, we cannot know beforehand how rapidly the debt may be increased without impairing the State's credit and causing a rise in the interest rate. This depends upon so many unpredictable factors lying outside the range of internal debt management that even an educated guess would be most difficult to hazard. What is possible to know, however, are the factors which have in the past importantly contributed to the high quality assigned to the State's general obligation bonds by bankers and the investing public alike, and this knowledge may, after all, provide the best counsel for the future.

Constitutional Provisions Governing State Borrowing

Article III, Section 34, of the Constitution of the State of Maryland, as discussed previously, contains two major provisions governing the creation of debt on the part of the State. The first limits the length of loans to fifteen years; the second requires that a specific tax be levied for the purpose of debt service upon the authorization of all loans by the General Assembly. Accordingly, a State property tax is levied to repay both interest and principal whenever a new loan is authorized. The method of arriving at the property tax rate is shown in Exhibit A of the Appendix. Briefly, it is determined by the assessed valuation of property and the loan

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1/ Interviews with Mr. Albert D. Graham, First National Bank, January 12, 1953 and Mr. Joseph O'C. McCusker, Deputy Comptroller of the Treasury, January 8, 1953. The apprehension expressed both by Mr. Graham and Mr. McCusker regarding the present high level of the State of Maryland debt seemed to be based upon the expectation of a general economic recession with all that this implied for the diversion of dwindling tax revenues to debt service.

An intermediate view was expressed by Mr. William J. Casey, Maryland Trust Company, in an interview January 9, 1953, who regarded the level of State debt and continuation of the present annual rate of borrowing in the light of long-run factors affecting the fiscal capacity of the State. The fiscal capacity of the State and its ability to service rising levels of debt without undue hardship depend, according to Mr. Casey, largely upon future developments pertaining to retention and growth of the State's population, the buoyancy of foreign trade, the decentralization of industry and location of plants.

authorizations requiring debt service for the tax year under consideration. The revenues resulting from levies applied in relation to balances of authorized but unissued bonds simply go into the Annuity Bond Fund Account, causing it to rise above current requirements.

Investigation disclosed that both of these provisions have had salutary effects upon bond quality and the salability of new issues, although the fifteen-year debt limit is considerably less than justified by the essentially "brick and mortar" character of long-run capital improvements financed through the use of loan funds.[1/]

Type of Bond and Mechanics of Issue

The State of Maryland general obligation bonds are issued serially, with maturities ranging from three to fifteen years. Rather than offer bonds at par and a designated rate of interest, bids are solicited on the rate of interest alone. These two features are favored by bankers and fiscal experts alike and conduce to a somewhat lower cost of borrowing.[2/] As regards timing, all available evidence bears witness to the fact that careful study has been given to the scheduling of sales so as to insure the smooth market absorption of new issues. The consensus is that Mr. Hooper S. Miles, the Treasurer since 1935, has executed the sale of bonds most expeditiously in this and all other possible connections.

1/ Interviews with Mr. Garland and Mr. Casey.

Mr. Garland expressed firm opposition to any constitutional amendment which would relinquish the State property tax to local governments on the grounds that it might impair the State's credit permanently. He did feel, however, that the State property tax might cease to be used in actual fiscal practice, and held in reserve as a fruitful source of revenue. A similar view was expressed by Mr. D. Benton Biser, Commission on Governmental Efficiency and Economy, in an interview, January 7, 1953, excepting that Mr. Biser did not suggest that relinquishment of the property tax would have a lasting effect on the State's credit.

2/ Interviews with Mr. Garland, Mr. Davis and Mr. Biser. Bidding on the interest rate alone is favored by Mr. Davis also on the grounds that states should not as a result of premium bidding secure borrowed sums in excess of estimated requirements.

Indices of Fiscal Capacity and Debt Burden

Notwithstanding the pioneering efforts of Edna Trull and Professor Ratchford, formal statistical procedures for measuring fiscal capacity and debt burden have by and large been abandoned,[1] and bankers and the investing public continue, as always, to give credence to the debt-to-assessed-valuation ratio in the evaluation of state credit. To the extent that this relationship has any analytical significance at all, it is certainly applicable to states, such as Maryland, where the property tax is not only still in use, but is levied for the explicit purpose of debt service.

Considering only the Maryland State component of total net long-term debt, it is seen in Table 10 that the ratio of debt to the assessed valuation of property has increased very considerably in recent years and shall reach an estimated 2.392 per cent by June 30, 1953. The opinion seems to be, however, that the ratio might be increased to 4.0 or 4.5 per cent without causing the State of Maryland to drop back to a "AA" rating.[2]

The Annuity Bond Fund Account

For those states where debt is serviced by means of specifically earmarked taxes, Moody's appraisal of bond quality is based upon special rather than general fund conditions. In Maryland, the State debt is serviced principally through property taxes levied for the purpose and the proceeds go into the "Annuity Bond Fund Account." So far as the explicit criteria used by Moody's are concerned, it is this fund that possesses particular analytical significance.

1/ The use of multiple economic series in the construction of indices of fiscal capacity and debt burden has in recent years been rejected in favor of the simpler per capita debt to per capita income relationship.

2/ Interview with Mr. Garland.

TABLE 10

THE MARYLAND STATE DEBT AND THE ASSESSED VALUATION OF PROPERTY
1947 - 1953

Year	Maryland State Debt Outstanding[1]	Assessed Valuation of Property[2]	Ratio of Debt to Assessed Valuation[3]
1947	$ 16,900,000	$ 3,000,000,000	0.583%
1948	22,700,000	3,200,000,000	0.709
1949	25,800,000	3,500,000,000	0.737
1950	32,800,000	3,900,000,000	0.841
1951	73,000,000	4,200,000,000	1.738
1952	91,500,000	4,600,000,000	1.988
1953	122,000,000	5,100,000,000	2.392

1/ For the fiscal year ending June 30. Estimated for 1953.

2/ Maryland State Tax Commission, Biennial Report.

3/ These ratios would be slightly smaller if the debt outstanding at the end of each fiscal year were reduced by the balances in the Annuity Bond Fund Account.

As shown in Table IV of the Appendix, the current receipts of the Annuity Bond Fund Account are derived from the following sources: (1) the loan or property tax; (2) the inheritance tax; (3) accrued interest; (4) transfers of unexpended loan funds; (5) repayments by the counties. The resources of the fund are used exclusively to pay principal and interest on the State debt. For the six-year period ending June 30, 1952, the property tax contributed $21,800,000, or 87.9% of total current proceeds. Corresponding debt service requirements for the same period were $22,800,000. Thus even with property tax rates fluctuating between 6.0¢ and 12.39¢ per $100 property valuation, the ratio of loan taxes alone to debt service requirements was 96.0%. Thus it can be seen that the actual property tax levy, combined with the receipts from other sources, served to maintain a more than ample balance in the fund at all times.

TABLE 11

LOAN TAX IN RELATION TO DEBT SERVICE REQUIREMENTS,
STATE OF MARYLAND
1947 - 1952

Year	Assessable Base[1]	Tax Rate Per $100[1]	Loan Tax[2]	Debt Service Requirements[2]	Ratio of Loan Tax to Debt Service Requirements
1947	$3,000,000,000	10.0 ¢	$2,901,504	$4,521,425	64.17%
1948	3,200,000,000	11.13	3,334,719	4,231,447	78.81
1949	3,500,000,000	11.15	4,019,171	3,974,215	101.13
1950	3,900,000,000	12.39	4,685,655	3,143,545	149.06
1951	4,200,000,000	6.0	4,083,512	3,154,141	129.47
1952	4,600,000,000	6.25	2,798,299	3,748,986	74.64

1/ Maryland State Tax Commission, Biennial Report.

2/ Comptroller of the Treasury of the State of Maryland, Annual Report.

Could, however, the excellent condition of the fund be maintained without an undue increase in property tax rates, were the $22,000,000 average annual rate of borrowing established over the five-year period ending June 30, 1953 to continue into the years to come? An approximate answer to this question is supplied by the economic model shown in Table 12 where the following simplifying assumptions were made: (a) a 5% annual increase in the assessable base; (b) an interest rate of 2%; (c) property tax levy equal to 96% of annual debt service requirements; (d) issue of serial-type bonds maturing annually in equal amounts over the full fifteen-year period.

It is apparent from Table 12 that an annual rate of borrowing of $22,000,000 would require a substantial increase in the property tax rate, that is, unless other sources of revenue for debt service are developed, or a partial pay-as-you-go policy of financing capital improvements is adopted. If other revenue sources are not tapped, the property tax will rise to a peak of 28.72¢ per $100 assessed value in 1963. It is noteworthy that this maximum rate falls short of Maryland's all-time high, which was 36.43¢ in 1919 and 1920.

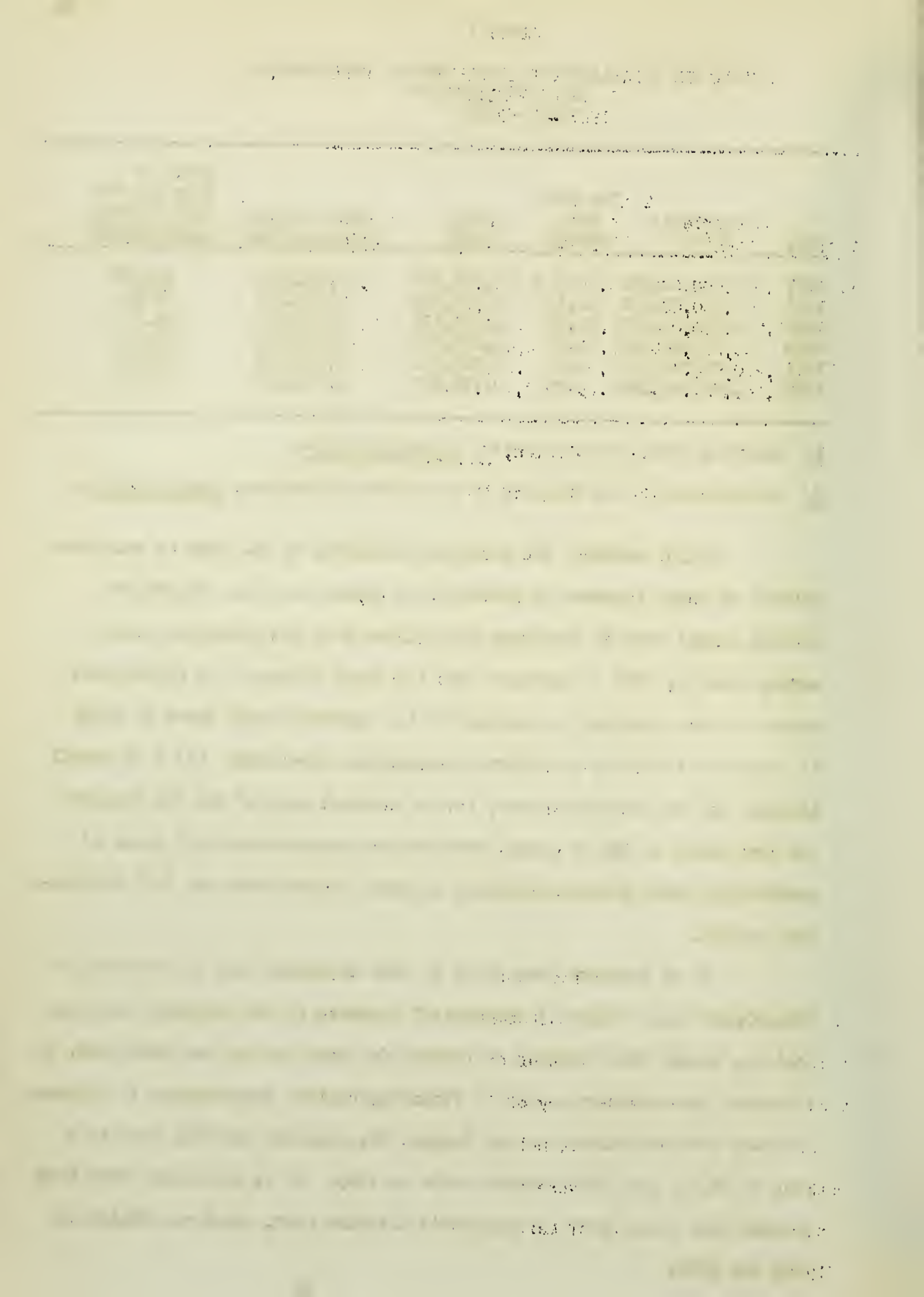

TABLE 12

ECONOMIC MODEL SHOWING EFFECT OF $22,000,000 ANNUAL RATE OF BORROWING ON PROPERTY TAX RATE

Fiscal Year	Existing Debt Service Requirements	Additional Debt Service Requirements for Annual $22,000,000 Issue 3/	Total Debt Service Requirements	Computed Tax Levy Required 4/	Computed Assessable Base 5/	Computed Tax Rate per $100
1953	$ 4,648,408 1/	-	$ 4,648,408	$ 4,462,471	$ 5,100,000,000	8.75 (6.04)*
1954	5,825,028 1/	-	5,825,028	5,592,026	5,760,000,000	9.71 (5.67)*
1955	8,443,000 2/	$ 1,907,000	10,350,000	9,936,000	6,050,000,000	16.42
1956	10,542,000 2/	3,785,000	14,327,000	13,754,000	6,350,000,000	21.66
1957	10,522,000 2/	5,633,000	16,155,000	15,509,000	6,670,000,000	23.25
1958	10,468,000 2/	7,452,000	17,920,000	17,203,000	7,000,000,000	24.58
1959	10,501,000 2/	9,242,000	19,743,000	18,953,000	7,350,000,000	25.79
1960	10,599,000 2/	11,002,000	21,601,000	20,737,000	7,720,000,000	26.86
1961	10,694,000 2/	12,733,000	23,427,000	22,490,000	8,110,000,000	27.73
1962	10,795,000 2/	14,435,000	25,230,000	24,221,000	8,520,000,000	28.43
1963	10,671,000 2/	16,107,000	26,778,000	25,707,000	8,950,000,000	28.72
1964	10,103,000 2/	17,750,000	27,853,000	26,739,000	9,400,000,000	28.45
1965	9,569,000 2/	19,364,000	28,933,000	27,776,000	9,870,000,000	28.14
1966	8,741,000 2/	20,948,000	29,689,000	28,501,000	10,360,000,000	27.51
1967	4,831,000 2/	22,503,000	27,334,000	26,241,000	10,880,000,000	24.12
1968	2,974,000 2/	24,029,000	27,003,000	25,923,000	11,420,000,000	22.70
1969	-	25,525,000	25,525,000	24,504,000	11,990,000,000	20.44
1970	-	25,525,000	25,525,000	24,504,000	12,590,000,000	19.46
1971	-	25,525,000	25,525,000	24,504,000	13,220,000,000	18.54
1972	-	25,525,000	25,525,000	24,504,000	13,880,000,000	17.65

1/ Budget Message of Governor Theodore R. McKeldin to the General Assembly of Maryland, Annapolis, January 26, 1953.

2/ Comptroller of the Treasury of the State of Maryland, Annual Report, Fiscal Year 1952. Note: Debt service for bond issues in 1953 fiscal year are estimated.

3/ At an interest rate of 2%.

4/ 96% of total debt service requirements.

5/ Increasing at an annual rate of 5%.

* Figures in parentheses represent actual tax rate voted by General Assembly. Non-loan-tax sources supplied the balance required.

CHAPTER IV

PRESCRIBED FORMULAS FOR ASSIGNING LIMITS TO THE STATE DEBT

Although there are no precise means of determining a priori just how far the debt at any level of government can be increased without serious economic consequences, three formulas for assigning limits to both state and local borrowing have been advanced as canons of sound fiscal policy. They involve the following relationships: (1) the ratio of debt to the assessed valuation of property; (2) the ratio of debt service to revenue; (3) the ratio of debt to revenue. The first of these, the ratio of debt to the assessed valuation of property, has found expression in numerous statutes and charters governing local debt and, as we have seen, has even been incorporated in constitutional provisions governing state borrowing. Despite the differences in methodological approach, the common objective of all three formulas involving the foregoing relationships is to insure that a larger amount of debt will not be incurred during periods of recovery and prosperity than can be borne by taxpayers during periods of recession and depression without causing undue hardship and the risk of default.

Ratio of Debt to the Assessed Valuation of Property

As a canon of sound fiscal policy in the establishment of debt limits, the debt-to-assessed-valuation ratio has generally been applied to local governments where the property tax constitutes the principal source of revenue for debt service.[1] Insofar as the relationship has any

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1/ Both as a canon of sound fiscal policy and as a guide to investors in the evaluation of bond quality, the debt-to-assessed-valuation criterion probably evolved from its analogue in the field of private business credit and finance. Looked at in this light, the collateral which secured state and local debt consisted in the property owned by taxpayers. In the normal course of events, the servicing of debt, regardless of the form of taxation, was made possible through the generation of all forms of income, including property income. In the extreme case, however, where current income was not sufficient to meet property and other tax liabilities incident to debt service requirements, the collateral securing outstanding debt consisting in the property owned by taxpayers would then have to be forfeited, either through the voluntary or the forced sale of property.

economic validity at all, it is probably just as applicable to states, like Maryland, where the property tax is levied for the explicit purpose of debt service.

A number of criticisms have been leveled at the debt-to-valuation formula for assigning limits to the borrowing of local governments: (1) vast differences in assessment ratios among local governments preclude the possibility of achieving uniform debt management; (2) limits may be applied without taking into consideration the overlapping of borrowing jurisdictions and debt; (3) revenue and special assessment bonds are commonly exempted from debt limits.1/

Those criticisms applicable both to state and local governments are as follows: First, when debt is limited to a given percentage of the assessed valuation of property, the borrowing jurisdiction may increase the debt limit through the arbitrary reassessment of property.2/ This is especially feasible, if accompanied by a decrease in the property tax rate. Secondly, the assessed valuation of property is by no means a reliable index of fiscal capacity and the ability to service debt. A state or local government's record of property tax collections, the revenues available from all other sources, and prevailing fiscal conditions are far more dependable indicators.3/ Thirdly, the limit, even when altered only in consequence of new building construction and reassessments strictly in line with rising market values, will by no means insure that future debt service requirements in the event of economic recession and depression will not cause

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1/ Alvin H. Hansen and Harvey S. Perloff, State and Local Finance in the National Economy, New York, 1944, p. 206.

2/ Ibid. (See also Buehler, op. cit., pp. 794-5.)

3/ Ibid.

disproportionate deflection of dwindling revenues away from urgently needed expenditures. Finally, and looked at from the standpoint of countercyclical spending on the part of state and local governments, the margin of permissable debt contracts along with the decline in property values just when expansionist fiscal policies are called for and deficit-financed programs can be undertaken with a minimum of cost.[1/]

Despite these criticisms, however, some credence has been given in recent years to the debt-to-assessed-valuation ratio as a means of establishing debt limits, at least for municipal governments. A study was made of the debt ratios of the two hundred largest cities for the year 1940,[2/] and the results shown in Table 13 were compared with the difficulty these cities experienced during the depression of the early thirties in meeting their obligations. Very few cities with debt ratios below 10 per cent suffered financial embarrassment. Those with debt ratios ranging between 10 and 15 per cent were on the threshold of serious trouble and succeeded in weathering the storm only in consequence of sound fiscal management and inherently stable economic resources. Nearly all cities with debt ratios in excess of 15 per cent, however, experienced financial disaster. It was concluded on the basis of these comparisons that a debt-to-valuation ratio of 10 per cent marked the critical limit for borrowing, excepting where special economic circumstances required that the ratio be readjusted downwards.[3/]

1/ Ibid.

2/ Municipal Finance Administration, Municipal Debt Administration, Municipal Management Series, The International City Managers' Association, 1946, pp. 259-60.

3/ Ibid.

TABLE 13

DEBT RATIOS FOR TWO HUNDRED LARGEST CITIES, 1940

Population	Low	Median	High
500,000 and over	3.7%	8.4%	13.8%
250,000 - 500,000	3.0	7.6	15.4
100,000 - 250,000	3.1	6.4	16.7
50,000 - 100,000	0.5	6.1	38.9
200 largest cities	0.5	6.4	38.9

Ratio of Debt Service to Revenue

The second formula for assigning limits to borrowing on the part of state and local governments is that proposed by Professor Alvin H. Hansen and Harvey S. Perloff, involving the ratio of debt service to the average annual revenue of the five preceding years.[1/] It is maintained by the advocates of this alternative approach that since debt service constitutes an inflexible item in state and local budgets, a firm decision must be made as to the maximum proportion of revenue that can be diverted to debt service without unfortunate economic consequences and that the record of state and local governments in the collection of taxes and other revenues in preceding years is a far more reliable index of debt-paying capacity than the assessed valuation of property.[2/]

The Hansen-Perloff formula is based upon the presumption that not more than twenty-five per cent of state and local revenues should be diverted to debt service. Accordingly, the equation for assigning maximum debt

1/ Op. cit., pp. 207-8.

2/ Ibid., pp. 206-7.

limits is as follows:

$$D_L = \frac{0.25 \times R}{P + i} \quad (1)$$

where

D_L = Maximum Debt Limit[1/]

R = Average Annual Revenue of Preceding Five Years[2/]

P = Proportion of Debt Retired Annually

i = Average Interest Rate of Preceding Three or Four Years

Given the revenue of the preceding five years, the maximum debt limit is determined by the length of borrowing and the interest rate.

It is suggested, however, that essentially the same results would follow from the equation:

$$D_m = 3 \times R \quad (2)$$ [3/]

This is true only on the rigid assumption that the denominator of equation (1) above was always approximately 0.083[4/]. But since equation (2) abstracts altogether from the length and cost of borrowing, its application could by no means be relied upon to insure that debt service would not exceed twenty-five per cent of revenue.

1/ Exempt from the debt limit are revenue and special assessment bonds to the extent that they are self-liquidating and tax-anticipation notes up to one-half the average annual revenue of the five preceding years. Ibid., p. 208.

2/ Revenue is explicitly defined to include tax collections, fees, licenses, and the surplus of government enterprise available for general fund use, but to exclude revolving fund income from public service enterprise and special purpose grants from higher levels of government. Ibid., p. 206.

3/ Ibid. p. 208.

4/ Account seems to have been taken of this underlying assumption in the footnote appearing on p. 208 (Ibid.).

Ratio of Debt to Revenue

Pursuing the principle that debt service should never exceed twenty or twenty-five per cent of total expenditures,[1] and even a smaller per cent if there are numerous inflexible items in the state budget,[2] Professor Ratchford suggests still another formula for the determination of debt limits, which is a variant of equation (2). The only difference is that Professor Ratchford segregates into two equal parts the maximum debt which should be authorized by the legislature and referendum respectively:[3]

$$D_L = 1.0 \times R \quad (3a)$$

$$D_R = 1.0 \times R \quad (3b)$$

$$D_C = 2.0 \times R \quad (3)$$

where

D_L = Maximum Net Debt Authorized by Legislature

D_R = Maximum Net Debt Authorized by Referendum

D_C = Maximum Combined Net Debt Authorized by Legislature and Referendum [4]

R = Average Annual Revenue of Preceding Five Years

1/ B. U. Ratchford, op. cit., pp. 565-66. It should here be noted that the desideratum of fiscal policy is to insure that debt service does not exceed a specified proportion of total expenditures rather than revenue. In the calculation of debt limits, very different results would be obtained unless expenditures were defined to exclude those made possible through borrowing and grants from higher levels of government.

2/ Ibid. State budgets are becoming increasingly inflexible, according to Professor Ratchford, owing to greater expenditures in the form of grants to local governments, pensions and other assistance to the aged and indigent. Periods of economic depression, moreover, impose greater responsibilities upon the states than heretofore with regard to unemployment relief. Since the states have developed revenue systems based upon the principle of ability to pay, and revenues are thus more sensitive to changing business conditions, the problem of inflexible budgets is further aggravated.

3/ Ibid., p. 595.

4/ By combined net debt, Professor Ratchford undoubtedly means the gross direct debt of the state, minus sinking funds and debts owed to state trust funds, plus revenue and local government bonds based upon state funds.

Professor Ratchford, while careful to point out that the results of his equation conform to the desideratum of debt limitation (i.e., to insure that debt service does not exceed a designated percentage of total expenditures) only if the length of borrowing and the interest rate stand in a certain relationship to each other,[1/] appears to have overlooked the fact that the results are further distorted by the inclusion of revenue rather than expenditures in equation (3), unless, of course, revenue is defined to include loan funds and grants from higher levels of government.

Criticism of the Hansen-Perloff and Ratchford Formulas

Despite the claims made for the debt service to revenue or expenditures approach to the determination of debt limits, there appear to be a number of significant weaknesses. Looked at from the standpoint of countercyclical fiscal policy, involving employment-and-income-creating deficit expenditures on the part of the public authority during periods of recession and depression and the curtailment of such expenditures during periods of prosperity, the rigid application of a five-year moving average might yield changing debt limits throughout the passage of time which either conformed or did not conform with such broader considerations of fiscal policy depending upon the amplitude of cyclical fluctuation (i.e., the peaks of prosperity and the valleys of depression) and the relative duration of the upswing and downswing phases of the business cycle. Thus application of neither of the equations provides any assurance that permissive borrowing margins would not contract too sharply during recession and depression, with all that this implied for the implementation of expansionist economic policies, and increase too greatly during recovery and prosperity, with all that this implied for the inflationary impulse.

1/ Ibid., pp. 565-66.

Or, if we abstract from cyclical considerations and presume a continuation of present peak levels of employment and income based upon an irreducibly large national budget into the indefinite future, the permissive borrowing margins would equal eventually the annual rate of debt retirement, without any encouragement at all provided to the retirement of debt on a net basis.[1]

Then, too, it is alleged in the case of the Hansen-Perloff approach that a twenty to twenty-five per cent ratio constitutes a nominal deflection of current revenue to debt service. For the year 1951 the ratio of debt service to revenue (after deducting federal grants-in-aid) for all the states combined was 3.6 per cent.[2] A permissable increase to even 15 per cent would have provided the states with an excessively large debt margin.[3] And even were we to allow the twenty to twenty-five per cent ratio as a tolerable limit, there is nothing inherent in the Hansen-Perloff or the Ratchford equations which would prevent an excessive deflection of revenue to debt service and a sharp curtailment of urgently required expenditures in the event of economic depression.[4]

1/ The effect of raising debt to assigned limits upon the annual rate of borrowing is discussed in the final section of this chapter.

2/ Bureau of the Census, Compendium of State Government Finances in 1951, Washington, D. C., 1952. More recent data are not as yet available.

3/ It should be pointed out that in the formulation of debt limits, neither Hansen and Perloff nor Ratchford suggest that actual debt should invariably be pushed to the theoretical limits. There is the ever-present danger, however, that the mere fact of a generally acceptable debt limit might itself provide encouragement to borrowing.

4/ Fully aware that formulas based upon the average annual revenue of the five preceding years would not prevent an abnormal deflection of revenue to debt service in the event of depression, Carl H. Chatters suggests that the equation for the determination of debt limits alternatively should be based upon a five-year forecast of the budget rather than past fiscal experience. (See Local Government Debt Administration, New York, 1939, pp. 357-58.)

Application of Prescribed Formulas to Maryland State Debt

Notwithstanding the objections raised with respect to all three prescribed formulas for assigning maximum limits to state and local borrowing, it would nevertheless be of considerable interest to compare the State of Maryland debt for the fiscal year ending June 30, 1953 with the theoretical debt limits arrived at through their application. The differences between the two would indicate the permissable debt margins, if any, according to each of the canons of sound debt management.

In making the comparisons, it was first necessary to isolate the State of Maryland debt as such from the net debt of the Maryland State Road Commission and determine what proportion of the theoretical maximums should be applied to the former. By taking the average relationship between the State of Maryland debt and the total net long-term debt for the State over the five-year period ending June 30, 1952, it was found possible to assign precisely one-half the estimated theoretical maximums to the State of Maryland component.

The theoretical debt limits were arrived at as follows:

(1) Debt-to-Valuation Ratio

$D_M = 0.10 \times V / 2$

$D_M = 0.075 \times V / 2$

where

V = Estimated Assessed Valuation of Property for Year 1953

= $5,100,000,000

(2) Debt-Service-to-Revenue Ratio (Hansen-Perloff)

$$D_M = \frac{0.25 \times R}{P + i} \times \frac{1}{2}$$

$$D_M = \frac{0.20 \times R}{P + i} \times \frac{1}{2}$$

where

R = Average Annual Revenue for Period 1948-52 (exclusive of federal grants)

= $142,600,000

P = Proportion of Debt Retired Annually

= 0.0666 (according to fifteen-year legal maximum for maturities prescribed by Maryland State Constitution)

i = Weighted Average Interest Rate for Period 1948-52

= 0.0134

(3) Debt-to-Revenue Ratic (Ratchford)

$D_C = 200.0 \times R / 2$

where

R = Average Annual Revenue for Period 1948-52 (exclusive of federal grants)

= $142,600,000

As shown in Table 14, all formulas yielded theoretical maximums considerably in excess of the estimated debt for June 30, 1953, the permissable debt margins ranging from a minimum of $20,600,000 to a maximum of $133,000,000.

TABLE 14

MARYLAND STATE DEBT LIMITS AND MARGINS[1/]
AS OF FISCAL YEAR ENDING JUNE 30, 1953

	Debt to Assessed Valuation	Debt Service to Revenue	Debt to Revenue
Theoretical Maximum Debt	$255,000,000 (10%) $191,300,000 (7.5%)	$222,800,000 (25%) $178,300,000 (20%)	$142,600,000 (200%)
Estimated Debt, June 30, 1953	$122,000,000	$122,000,000	$122,000,000
Debt Margin	$133,000,000 (10%) $ 69,300,000 (7.5%)	$100,800,000 (25%) $ 56,300,000 (20%)	$20,600,000 (200%)

1/ Percentages used in determining limits of Maryland State debt are shown in parentheses. In computing the actual limits, the percentages were divided by 2 (see formulas), in order to allow for State Roads Commission debt which was excluded from this study.

SUMMARY AND CONCLUSIONS

One of the most significant developments in the Maryland fiscal scene during the years following the end of World War II has been the rapid growth of the State debt. Increasing at an average annual rate of $17,500,000 over the past six years, the State debt will reach an all-time peak, estimated at $122,000,000, by the end of the present fiscal year, June 30, 1953. Nor does there appear to be any immediate prospect for a retardation in the growth of debt in view of the fact that authorized but unissued general obligation bonds, including those recently authorized under the General Construction Loan of 1953, approximate $68,000,000. Since, moreover the aforementioned loan provides only for the "recommended" portion of the Maryland State Planning Commission's 1953 Long-Term Capital Improvement Program, it is reasonable to suppose that some part of the balance of the program, amounting to an additional $61,000,000, will find its way into the future State debt.

Despite the rapid growth of debt, however, the State of Maryland has maintained its excellent credit rating and secured loan funds on the best possible terms under prevailing capital market conditions. But can the State persist in piling up debt at the pace established in recent years without impairing the quality of its bonds and causing an undue increase in the cost of borrowing? Can, indeed, it do so without causing an excessive deflection of dwindling revenues to debt service and a contraction of urgently required expenditures in the event of an economic depression? To the first question, there is no definitive answer. It is possible, however, to consider those factors which have in the past contributed to the high quality assigned to the State's general obligation bonds by bankers and the investing public alike, and this knowledge may, after all, provide the

best counsel for the future. To the second, an approximate but not wholly satisfactory answer is supplied by comparing the present level of the State debt with the theoretical borrowing limits arrived at through the application of several different prescribed formulas which have been advanced as canons of sound debt management. Still another question might be posed, namely, would the postwar growth of the State debt have been held in check had borrowing authority resided in the electorate (i.e., where loan authorizations require constitutional amendment or referendum) rather than in the State legislature?

These, then, constitute the principal lines of inquiry upon which this study is based, and the results may briefly be summarized as follows:

1. Grouped according to the location of their "effective" borrowing authority, review of the growth of debt over the period 1948-52 disclosed that those states hampered by electoral encumbrances increased their debts more than two and one-half times as rapidly as those states whose legislatures were free to borrow without constitutional restriction. Considered in relation to fiscal capacity as measured by per capita income payments, however, the level of debt in those states whose legislatures were free to borrow without constitutional restriction was in 1952 greater than in those states hampered by electoral encumbrances.

2. Of the various proximate and possible controllable factors influencing the yield on new issues of the State's general obligation bonds, the formal rating of Moody's Investors Service is indubitably the most important. This is so because of the high esteem in which Moody's ratings are held by both bankers and the investing public. For states, such as Maryland, where each loan authorization is accompanied by a specific levy for the payment of interest and principal, Moody's analysts in appraising

bond quality accord particular attention to the fiscal condition of the special fund used for the exclusive purpose of debt service. During the years following World War II, and right up to the present, a more than ample balance has been maintained in the Annuity Bond Fund Account at all times despite widely fluctuating property tax rates, and it is probably on this account that the general obligation bonds of the State of Maryland have consistently been assigned an "AAA" rating in the face of a sharply rising debt. The excellent condition of the Annuity Bond Fund Account could not be maintained without an undue increase in property tax rates, however, if the average annual rate of borrowing established in recent years were to continue for more than a few years in the future.

Besides Moody's rating, other factors, such as the fifteen-year debt limit, the levy of a specific tax for debt service, and the issue of serial-type bonds, have had a salutary effect upon bond quality and the salability of new issues.

3. Viewed in the light of the various canons of sound debt management, the level of the State debt estimated for the end of the present fiscal year, June 30, 1953, is by no means excessive, with debt margins (i.e., permissable increases in debt) ranging from $20,600,000 to $133,000-000. Serious defects attach to each of the prescribed formulas for the determination of debt limits, however, and none of them can be followed blindly as rigid guides to fiscal policy.

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A P P E N D I C E S

APPENDIX TABLE I

PROVISIONS OF STATE CONSTITUTIONS LIMITING STATE BORROWING[1/]

State	Limitations on the Electorate	Limitations on the Legislature	Exceptions to Limitations on the Legislature
	Code: Authorization of loan by voters requires: C.A. - constitutional amendment; Ref.- referendum; Int.- provision for tax to pay interest; Pay. - provision for repayment.	Code: N. L. - no limit; N. B. - Leg. may not borrow; Int.- Leg. must levy tax to pay interest; Pay. - Leg. must levy tax for repayment.	Code: 1. To cover casual deficit; 2. To refund; 3. To repel invasion; 4. To suppress insurection; 5. To defend state.
Ala.	C. A.	N. B.	1 ($300,000), 2, (3, 4 by 2/3 vote)
Ariz.	C. A. (vote limited to real property taxpayers)	N. B.	1 ($350,000), 3, 4, 5
Ark.	Ref.	N. B.	2
Calif.	Ref.; Int.; Pay. (75 yrs.)	$300,000	3, 4
Colo.	C. A.	N. B.	1 ($100,000), 2, 3, 4, 5; to erect pub. bldgs.
Conn.	No provisions	No provisions	
Del.	Legislature borrows	3/4 vote each house	1, 2, 3, 4, 5
Fla.	C. A.	N. B.	3, 4
Ga.[2/]	C. A.	N. B.	1 ($500,000), 2, 3, 4, 5
Idaho[3/]	Ref.; Int.; Pay. (20 yrs.)	$2,000,000	3, 4

1/ Table same as that shown in Professor B. U. Ratchford's American State Debts, Duke University Press, Durham, N.C., 1941, pp.430-31. A similar table is shown in Amos Tilton's Constitutional Limitations on the Creation of State Debt, The Governor's Committee on Preparatory Research for the New Jersey Constitutional Convention, May 1947. Any differences between the two will be noted in subsequent footnotes.

2/ Debt not to exceed taxes lawfully levied each year. Tilton, op. cit.

3/ Two million dollar limit not shown in Tilton's table.

APPENDIX TABLE I (Continued)

State	Limitations on the Electorate	Limitations on the Legislature	Exceptions to Limitations on the Legislature
Ill.	Ref.; Int.	N. B.	1 ($250,000), 3, 4, 5
Ind.	C. A.	N. B.	1, 3, 4, 5
Iowa	Ref.; Int.; Pay. (20 yrs.)	N. B.	1 ($250,000), 3, 4, 5
Kan.	Ref.; Int.; Pay. (when due)	$1,000,000	3, 4, 5
Ky.[4]	Ref.; Int.; Pay. (30 yrs.)	N. B.	1 ($500,000), 2, 3, 4, 5
La.	C. A.	N. B.	2, 3, 4
Maine[5]	C. A.	$36,000,000 (exceptions) 4% Int.; 15-yr. serial bonds	3, 4, 5
Md.	Legislature borrows	N. L.; Int.; Pay (15 yrs.)	1 ($50,000), 5
Mass.	Legislature borrows	2/3 vote each house	3, 4, 5; tax antic. loans
Mich.	C. A. (vote limited to prop. taxpayers and spouses)	N. B.	1 ($250,000), 3, 4, 5
Minn.	C. A.	N. B.	$250,000; 3, 4, rural credits; to prevent forest fires; $75,000,000 for highways
Miss.	No provisions	No provisions	
Mo.	C. A.	N. B.	1 and emergencies ($250,000 each yr.), 2
Mont.	Ref.; Int.; Pay. (when due)	$100,000; Int.; Pay.	3, 4

4/ No applicable provisions. Ibid.

5/ Debt limited to $1,000,000, excepting for highways and bridges. Ibid.

APPENDIX TABLE I (Continued)

State	Limitations on the Electorate	Limitations on the Legislature	Exceptions to Limitations on the Legislature
Neb.	C. A.	N. B.	1 ($100,000), 3, 4, 5
Nev.	C. A.	1% ass'd. value prop.; Int.; Pay (20 yrs.)	3, 4, 5; to preserve natural resources
N. H.	No provisions	No provisions	
N. J.	Ref.; Int.; Pay. (35 yrs.)	$100,000	3, 4, 5
N. M.	Ref. (limited to 1% ass'd. value prop.); Int.; Pay. (50 yrs.)	N. B.	1 ($200,000), 3, 4, 5; for nec. expenses
N. Y.	Ref. (and approval of Leg.); Pay. (50 yrs.); serial	N. B.	3, 4, 5; to suppress forest fires; tax antic. loans
N. C.	Ref.	2/3 debt reduced previous biennium	1, 2, 3, 4; tax antic. loans to 50% revenues
N. D.	C. A.	$2,000,000; Int.; Pay. (30 yrs.)	3, 4, 5; funds to lend on real est.; $10,000,000 for state enterprises
Ohio	C. A.; Int.; Pay.	N. B.	1 ($750,000), 2, 3, 4, 5
Okla.	Ref.; Int.; Pay (25 yrs.)	N. B.	1 ($400,000), 3, 4, 5
Ore.[6/]	C. A.	11% ass'd. value prop. for specified purposes	3, 4, 5
Pa.[7/]	C. A.	N. B.	1 ($1,000,000), 2, 3, 4, 5
R. I.	Ref.	$50,000	3, 4, 5
S. C.	Ref. (2/3 majority); Int.; Pay. (40 yrs.)	N. B.	1

6/ $50,000 and up to 4.0 per cent of assessed valuation for highways. Ibid.

7/ $100,000,000 for highways. Ibid.

APPENDIX TABLE I (Continued)

State	Limitations on the Electorate	Limitations on the Legislature	Exceptions to Limitations on the Legislature
S. D.[8]	C. A.	Int.; Pay.(10 yrs.); for rural credits, ½% ass'd. value prop. and 2/3 vote	1 ($100,000), 2, 3, 4, 5; to provide funds for coal, cement, and elec. enterprise
Tenn.	No provisions	No provisions	
Tex.	C. A.	N. B.	1 ($200,000), 2, 3, 4, 5
Utah[9]	C. A.	N. B.	1, 2, 3, 4, 5
Vt.	No provisions	No provisions	
Va.[10]	Ref. (limited to 1% val. of taxable real estate)	N. B.	1, 2, 3, 4, 5
Wash.	Ref.; Int.; Pay. (20 yrs.)	N. B.	1 ($400,000), 3, 4, 5
W. Va.[11]	C. A.; Pay. (not less than 20 yrs.)	N. B.	1, 2, 3, 4, 5; $50,000,000 for roads
Wis.	C. A.	N. B.	1 ($100,000), 3, 4, 5
Wyo.[12]	Ref. (limited to 1% ass'd. value taxable property)	Amount tax revenues for current year	4, 5

8/ Five per cent of assessed valuation. Ibid.

9/ Limitation on legislature 1.5 per cent assessed valuation; legislature must levy tax to pay interest and principal; debt limited to twenty years. Ibid.

10/ Limitation of 1.0 per cent of assessed valu tion not shown. Ibid.

11/ Provision for repayment of debt in not less than twenty years not shown. Ibid.

12/ No debt in excess of taxes for current year without approval of voters. Ibid.

APPENDIX TABLE II

STATES RANKED ACCORDING TO RATIO OF PER CAPITA NET LONG-TERM DEBT TO PER CAPITA INCOME PAYMENTS

State	Net Long-Term Debt[1] (1952)	Per Capita Net Long-Term Debt[1] (1952)	Per Capita Income Payments[2] (1951)	Ratio Column (3) Divided By Column (4)	Rank
(1)	(2)	(3)	(4)	(5)	(6)
Del.	$ 90,900,000	$ 276.18	$ 2,076	0.133	1
W. Va.	234,000,000	117.31	1,174	0.100	2
Ark.	122,400,000	64.06	926	0.069	3
La.	200,900,000	78.18	1,135	0.064	4
S. C.	116,400,000	54.80	1,003	0.055	5
N. C.	216,700,000	52.40	1,052	0.0498	6
Pa.	866,100,000	82.03	1,663	0.0493	7
Mass.	388,800,000	82.16	1,738	0.047	8
Okla.	120,600,000	53.21	1,182	0.045	9
Miss.	67,600,000	30.83	771	0.040	10
Md.	163,000,000	66.77	1,714	0.0388	11
Mont.	39,200,000	66.49	1,742	0.0381	12
N. J.	336,800,000	67.71	1,885	0.036	13
R. I.	46,200,000	58.26	1,691	0.034	14
Ore.	83,500,000	53,58	1,652	0.032	15
Wash.	164,400,000	67.77	1,755	0,031	16
Mich.	343,900,000	52.54	1,734	0.030	17
N. M.	26,500,000	37.65	1,301	0.028	18
Tenn.	90,300,000	27.22	1,064	0.026	19
Minn.	113,300,000	37.18	1,474	0.025	20
Maine	26,200,000	29.42	1,298	0.0236	21
N. H.	18,000,000	33.65	1,444	0.0233	22
Conn.	78,600,000	38.58	1,715	0.0225	23
Ill.	365,000,000	41.39	1,928	0.021	24
Ala.	52,800,000	17.35	950	0.018	25
Fla.	64,500,000	21.79	1,284	0.017	26
N. Y.	475,600,000	31.65	1,996	0.015	27
N. D.	12,200,000	20.23	1,403	0.014	28
Cal.	284,800,000	25.83	1,933	0.013	29
Ohio	161,900,000	20.07	1,799	0.011	30
Vt.	5,000,000	13.40	1,322	0.010	31
Wyo.	4,400,000	14.95	1,722	0.009	32
Iowa	32,900,000	12.52	1,531	0.008	33
Tex.	86,400,000	10.82	1,412	0.0076	34
Col.	15,600,000	11.32	1,568	0.0072	35
Va.	27,500,000	8.12	1,295	0.006	36
S. D.	5,500,000	8.47	1,529	0.0055	37
Ga.	20,100,000	5.76	1,103	0.0052	38
Ky.	10,300,000	3.52	1,066	0.0033	39
Mo.	18,200,000	4.51	1,519	0.0031	40
Ariz.	2,800,000	3.51	1,432	0.0024	41
Nev.	800,000	4.79	2,029	0.00236	42

APPENDIX TABLE II (CONTINUED)

State	Net Long-Term Debt 1/ (1952)	Per Capita Net Long-Term Debt 1/ (1952)	Per Capita Income Payments 2/ (1951)	Ratio Column (3) Divided By Column (4)	Rank
(1)	(2)	(3)	(4)	(5)	(6)
Ind.	$ 13,600,000	$ 3.41	$ 1,649	0.00206	43
Idaho	1,600,000	2.74	1,356	0.00202	44
Kan.	4,400,000	2.27	1,460	0.001	45
Utah	900,000	1.28	1,424	0.0008988	46
Wisc.	5,000,000	1.45	1,614	0.0008983	47
Neb.	800,000	0.61	1,510	0.0004	48

1/ Bureau of the Census, Government Debt in 1952, Washington, 1952.

2/ Department of Commerce, Survey of Current Business, August 1952.

APPENDIX TABLE III

STATES RANKED ACCORDING TO PER CENT CHANGE IN NET LONG-TERM DEBT, 1948-1952

STATE	Net Long-Term Debt 1/ 1948	1952	Per Cent Change	Rank	Group
Ala.	$ 46,600,000	$ 52,800,000	13.3	33	I
Ariz.	2,600,000	2,800,000	7.7	38	I
Ark	114,800,000	122,400,000	6.6	39	II
Cal.	72,000,000	284,800,000	295.5	17	II
Col.	15,600,000	15,600,000	0.0	41	I
Conn.	71,000,000	78,600,000	10.7	34	III
Del.	7,100,000	90,900,000	1180.2	6	III
Fla.	2,100,000	64,500,000	2971.4	1	I
Ga.	3,600,000	20,100,000	458.3	10	I
Idaho	300,000	1,600,000	433.3	12	II
Ill.	454,800,000	365,000,000	(-) 19.7	43	II
Ind.	12,100,000	13,800,000	14.1	32	I
Iowa	1,900,000	32,900,000	1631.5	4	II
Kan.	6,300,000	4,400,000	(-) 30.2	45	II
Ky.	7,800,000	10,300,000	32.1	27	II
La.	163,200,000	200,900,000	23.1	30	I
Maine	12,700,000	26,200,000	106.3	23	I
Md.	29,800,000	162,900,000	443.6	11	III
Mass.	167,700,000	388,800,000	131.5	21	III
Mich.	253,300,000	343,900,000	39.7	26	I
Minn.	41,800,000	111,300,000	166.2	20	I
Miss.	61,200,000	67,600,000	0.7	40	III
Mo.	48,600,000	18,200,000	(-) 62.5	48	I
Mont.	11,600,000	39,200,000	237.8	18	II
Neb.	900,000	800,000	(-) 11.1	42	I
Nev.	300,000	800,000	166.6	19	III
N. H.	14,600,000	18,000,000	23.3	29	III
N. J.	81,200,000	336,800,000	316.1	15	II
N. M.	24,500,000	26,500,000	8.1	37	II
N. Y.	612,600,000	475,600,000	(-) 22.3	44	II
N. C.	21,800,000	216,700,000	894.0	7	II
N. D.	18,300,000 2/	12,200,000	(-) 33.3	46	III
Ohio	9,200,000	161,900,000	1659.8	3	I
Okla.	5,100,000	120,600,000	2310.0	2	II
Oreg.	5,500,000	83,500,000	1418.1	5	I
Pa.	126,900,000	866,100,000	581.8	9	I
R. I.	38,900,000	46,200,000	18.7	31	II
S. C.	76,600,000	116,400,000	51.9	25	III
S. D.	12,400,000	5,500,000	(-) 55.6	47	III
Tenn.	71,700,000	90,300,000	25.9	28	III
Tex.	18,600,000	86,400,000	364.4	14	I
Utah	400,000	900,000	125.0	22	III
Vt.	2,900,000	5,000,000	72.4	24	III
Va.	5,400,000	27,500,000	409.4	13	II
Wash.	21,600,000	164,400,000	661.5	8	II
W. Va.	58,200,000	234,000,000	302.1	16	I
Wisc.	4,600,000	5,000,000	18.8	36	I
Wyo.	2,300,000	4,400,000	9.1	35	II
ALL STATES	$2,827,200,000	$5,624,900,000			

1/ Department of Commerce, Compendium of State Government Finances in 1948, and Government Finances in the United States: 1952, Washington, D. C.

2/ Gross long-term debt because for this year sinking fund offset reduced net total long-term debt to zero.

APPENDIX TABLE IV

ANNUITY BOND FUND ACCOUNT
STATE OF MARYLAND
1947-1952

Year	Balance Beginning of Fiscal Year	Receipts					Total Funds Available	Disbursements			Balance End of Fiscal Year
		Loan Tax	Inheritance Tax	Accrued Interest	Transfers 1/	Repayments 2/		Interest	Redemption	Total	
1947	$2,189,355	$2,901,504	$809,655	$ -	$ 4	$ -	$5,900,520	$ 514,425	$4,007,000	$4,521,425	$1,379,095
1948	1,379,095	3,334,719	832,722	-	41,319	-	5,587,855	445,447	3,786,000	4,231,447	1,356,408
1949	1,356,408	4,019,171	825,492	5,579	-	-	6,206,651	394,215	3,580,000	3,974,215	2,232,436
1950	2,232,436	4,685,655	481,012	5,411	10	-	7,404,525	400,545	2,743,000	3,143,545	4,260,980
1951	4,260,980	4,083,512	-	18,776	799,976*	332,722	7,896,015	642,141	2,512,000	3,154,141	4,741,874
1952	4,741,874	2,798,299	-	14,837	276,631	390,465	8,222,108	1,077,986	2,671,000	3,748,986	4,473,121

Source: Comptroller of the Treasury of the State of Maryland, Annual Report.

1/ Unexpended loan funds transferred to Annuity Bond Fund Account.

2/ Loan repayments by counties.

* Denotes red.

EXHIBIT A

Senate Bill No. 96--By Senator Kimble.

CHAPTER NO. 406

A BILL ENTITLED

AN ACT to fix the rate of State taxation for the year nineteen hundred and fifty-four (1954) in accordance with the provisions of Section 32 of Article 81 of the Code of Public General Laws of the State of Maryland (1951 Edition).

SECTION 1. Be it enacted by the General Assembly of Maryland, That the rate of State taxation for the year nineteen hundred and fifty-four (1954) is hereby fixed in the manner following, and the taxes for each of the State loans herein specified to be used to pay the installments of principal and interest thereon:

	Cents per $100.00 1954	
General Bond Issue of 1937	~~.06~~	.03
General Bond Issue of 1939	~~.07~~	.43
General Bond Issue of 1941	~~.27~~	.14
Post-War Construction Loan of 1945	~~.64~~	.32
State Office Building Loan of 1945	~~.01~~	.01
General Construction Loan of 1947	~~2.21~~	1.11
Armory Loan of 1948	~~.06~~	.03
General Construction Loan of 1949	~~2.60~~	1.30
General Public School Assistance Loan of 1949	~~2.22~~	1.11
Maryland School for Blind Loan of 1949	~~.09~~	.05
General Construction Loan of 1950	~~.75~~	.38
Mental Hospital Construction Loan of 1950	~~.22~~	.11
General Construction Loan of 1951	~~.32~~	.16
Civil Defense Loan of 1951	~~.04~~	.02
Johns Hopkins University Loan of 1951	~~.03~~	.02
St. Mary's Seminary Junior College Loan of 1951	~~.04~~	.02
General Construction Loan of 1952	~~.86~~	.43
	~~11.29~~	5.67

The above items making an aggregate rate for State Taxes of ~~eleven and twenty-nine hundredths cents (11.29¢)~~ FIVE AND SIXTY-SEVEN HUNDREDTHS CENTS (5.67¢) for the year nineteen hundred and fifty-four (1954) on each One Hundred Dollars ($100.00) of assessable property.

SEC. 2. And be it further enacted, That this Act shall take effect June 1, 1953.

EXPLANATION: CAPITALS indicate amendments to bill.
~~Strike out~~ indicates matter stricken out of bill.

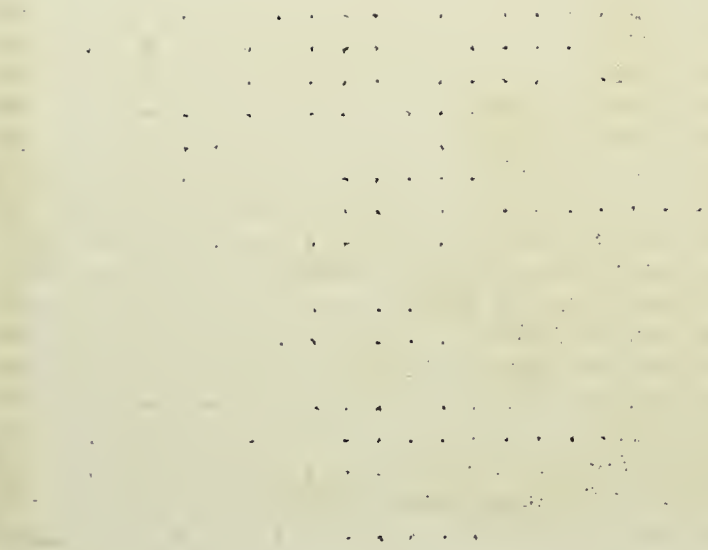

EXHIBIT B

MOODY'S INVESTORS SERVICE

65 Broadway
New York 6, N.Y.

January 12,1953

Mr. Albert R. Miller, Jr.
Maryland State Planning Commission
100 Equitable Building
Baltimore 2, Maryland

Dear Mr. Miller:

Mr. John Sherman Porter, our editor-in-chief has asked me to reply to your recent letter in which you inquire regarding the criteria employed in assigning ratings to state bonds.

No simple answer is possible, for our ratings are not the result of a statistical formula into which specific factors, possible to enumerate and identify, alone figure. Rather, the ratings are the symbolic expression of bond qualities, representing the composite opinion of a group of analysts, and draw heavily on their experience and judgment.

Some of the identifiable factors vary from state to state. For example, in Massachusetts, New York, Michigan and certain other states, state debt is serviced from the state's general fund, and bond quality is importantly related to the present and likely future position of the general fund. In South Carolina, Alabama and Louisiana, most state issues are payable from spedific funds which receive earmarked tax revenues, and bond quality reflects special fund rather than general fund condition; that is why, at most times, we have had various ratings on different obligations of one of these states. Finally, debts in West Virginia and Texas are secured by special funds, but certain of these funds are in such insecure position that bond quality is determined, not by the initial source of payment, but by the "guarantor", the state's general fund.

Broadly speaking, in the analysis of general credit we are concerned with the size of demands upon the general funds in relation to its resources. These demands include not only the fixed requirements of debt service, but also the irreducible (as a matter of practical politics) requirements of aid to the indigent and aid to local governments, whether these demands loom large currently or loom more as a future liability. By the resources of a state we refer both to its established tax structure and to such expansion of the taxing powers as may reasonably be anticipated, and we also refer to the likely degree of stability of tax yields under the business forecasts of our economists, bearing in mind the economic background of the state.

Finally, there are such things as changing fiscal habits which, on occasion, find some reflection in our ratings. Thus, Pennsylvania's rating was dropped a notch about two years ago, as you noted. For a century, Pennsylvania had followed a very conservative financial tradition with only minor lapses. State debt was very light, and such debt as was outstanding in 1949 was well secured by earmarked funds. Late that year the voters authorized the state to issue bonds up to $500 million to pay a bonus to war veterans; early the following year the bonds were sold. It is possible that the rating would not have been reduced from Aaa if the bonus bond issue had been the only matter. But the bonds were sold with no specific provision for payment. And about the same time the Legislature authorized, and the state courts permitted, the creation of legally unlimited tax-supported debt by the "authority" method without referendum. We felt that the character of Pennsylvania's credit was lastingly changed, and our rating was reduced as of February 4, 1950.

The cases of Washington and West Virginia were roughly paralled: too much non-general debt on top of much general debt. The situation in Washington was further complicated by an embarrassed general fund, a matter which seems to defy lasting correction.

You have asked also why we improved Maryland's rating some thirteen years ago. It is difficult to recall the exact circumstances so long after the event. In general, I would say that the change was not inspired by any single development, but rather by a shift in our point of view. I cannot be sure. I have no memory for details even through I personally was one of the people working on this credit at the time. We review all ratings periodically. In our 1940 review of State of Maryland, I believe we found that the state had stood up under the trials of the depression 1930's better than we had appreciated theretofore. Also, as you may recall, it was not until roughly 1940 that people generally could visualize the United States moving forward through war into a new high order of prosperity; through the late 1930's, most people were measuring the risk that the country might lapse back into 1932-33 conditions.

Thus ratings are revised for a variety of reasons. Sometimes the revisions reflect some definite development concerning a particular credit situation. Sometimes the ratings change because we, the makers of the ratings, revise our appraisals of risk.

I trust these comments may prove helpful.

Very truly yours,

MOODY'S INVESTORS SERVICE

/ s / David M. Ellinwood

David M. Ellinwood - Manager
Municipal Department

DME:al

EXHIBIT C

JOHN C. LEGG AND COMPANY

Bankers
Baltimore 3, Maryland

MUNICIPAL BRIEF:

STATE OF MARYLAND

$18,505,000 Certificates of Indebtedness
Selling Wednesday, October 8, 1952 in Annapolis at 2 P.M. (EST)

Dated: November 1, 1952 Denomination: $1,000
Form: Coupon. May and November 1. Registerable as to principal only.

Due serially November 1

Amount	Due	Yield	Amount	Due	Yield
$1,260,000	11-1-1955	____	$1,447,000	11-1-1962	____
1,285,000	1956	____	1,477,000	1963	____
1,311,000	1957	____	1,506,000	1964	____
1,337,000	1958	____	1,537,000	1965	____
1,365,000	1959	____	1,568,000	1966	____
1,392,000	1960	____	1,600,000	1967	____
1,420,000	1961	____			

Payable: In Baltimore, Maryland
Delivery: About October 15, 1952
Legal In: New York, Massachusetts and Connecticut
Type of Obligation: Legal and valid binding obligations of the State of Maryland.

FINANCIAL STATEMENT

(As officially reported by the State Treasurer as of April 1, 1952)

Assessed valuation for taxation, 1951		$4,162,583,920
Total bonded debt (this issue included)		110,241,000
Less general sinking fund	$4,847,190	
Net bonded debt.		105,393,810

*The above statement does not include $70,502,000 Road Commission Bonds which are payable from designated revenues.

Population — 1950 census - 2,343,001

Net Bonded Debt About 2.53 Per Cent of Assessed Valuation

Moody Rates The State of Maryland "AAA"

EXHIBIT C (Continued)

Tax Collection Record

Year	Levy	Collected as of June 30, 1951	%
1949	$3,905,335	$3,882,431	99.41
1950	4,812,076	4,709,932	97.88
1951	2,497,550	1,687,293	67.56

Interest exempt, in the opinion of counsel, under existing laws from all Federal Income Taxes.

The above and foregoing information was supplied to us in part by the State Treasurer on September 30, 1952, and was taken from other sources which we consider reliable.

Legality to be approved by the attorney general of the state of Maryland

This is not a complete statement of all material information concerning these Bonds. It has been obtained from sources which we consider reliable for the dissemination of information only and is not guaranteed by us.

MUNICIPAL DEPARTMENT

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